

TC-KE230

SERVICE MANUAL

AEP Model
UK Model

The mechanical and electrical specifications of TC-KE230 is almost same as TC-KE200.

This manual contains only the points which differ from TC-KE200.

For the informations not contained in this manual, please refer to the TC-KE200/KE300/KE400S/RX300 service manual (9-960-660- 00) previously issued.

DIFFERENT PARTS LIST

Page	TC-KE200			TC-KE230		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
38	* 7	3-933-307-01	PANEL, BACK (KE200:AEP,G)	7	3-933-307-21	PANEL, BACK (AEP)
	* 7	3-933-307-11	PANEL, BACK (KE200:UK)	7	3-933-307-31	PANEL, BACK (UK)
39	51	X-3371-690-2	PANEL ASSY, FRONT (KE200)	51	X-4951-380-1	PANEL ASSY, FRONT
	55	3-931-429-01	BUTTON (POWER)	55	3-931-429-62	BUTTON (POWER)
51		ACCESSORIES & PACKING MATERIALS *****			ACCESSORIES & PACKING MATERIALS *****	
	*	3-935-033-01	INDIVIDUAL CARTON (KE200)		not supplied	

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

STEREO CASSETTE DECK

SONY®



TC-KE200/KE300/KE400S/RX300

SERVICE MANUAL

Ver 1.1 2001.05

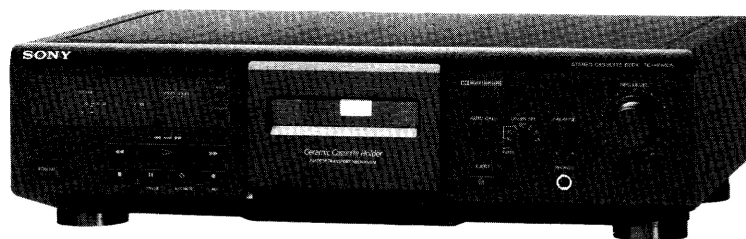


Photo : TC-KE400S

US Model
TC-KE400S

Canadian Model
TC-RX300


AEP Model
TC-KE200/KE300/KE400S

UK Model
TC-KE200/KE400S

E Model
TC-KE300

Australian Model
TC-KE300/KE400S

- Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	TC-K215/K361/K461S/RX361
Tape Transport Mechanism Type	TC-KE200 : TCM-190VB22CS TC-KE300/KE400S : TCM-190VB12CS TC-RX300 : TCM-190RB12C

SPECIFICATIONS

System

Recording system

4-track 2-channel stereo

Fast winding time (approx.)

90 sec. (with Sony C-60 cassette)

Bias

AC bias

Heads

Erasing head × 1 (F&F head)
Playing/Recording head × 1 (SD head)

Motors

Capstan motor × 1 (DC servo motor)
Reel motor × 1 (DC motor)

Signal-to-noise ratio (at peak level, weighted, and with Dolby NR off)

Type I tape, Sony Type I (NORMAL): 55 dB
Type II tape, Sony Type II (HIGH): 57 dB
Type IV tape, Sony Type IV (METAL): 58 dB

S/N ratio improvement (approximate values)

With Dolby B NR on: 5 dB at 1 kHz, 10 dB at 5 kHz
With Dolby C NR on: 15 dB at 500 Hz, 20 dB at 1 kHz

Harmonic distortion

0.4% (with Type I tape, Sony Type I (NORMAL):
160n Wb/m 315 Hz, 3rd H.D.)
1.8% (with Type IV tape, Sony Type IV (METAL):
250n Wb/m 315 Hz, 3rd H.D.)

Frequency response (Dolby NR off)

Type I tape, Sony Type I (NORMAL) :
EXCEPT KE200
30-15,000 Hz (± 3 dB, IEC)
20-16,000 Hz (± 6 dB)
KE200
30-14,000 Hz (± 3 dB, IEC)
20-15,000 Hz (± 6 dB)
Type II tape, Sony Type II (HIGH) :
EXCEPT KE200
30-16,000 Hz (± 3 dB, IEC)
20-17,000 Hz (± 6 dB)
KE200
30-15,000 Hz (± 3 dB, IEC)
20-16,000 Hz (± 6 dB)

— Continued on page 2 —

STEREO CASSETTE DECK

SONY®

9-960-660-12

2001E0200-1

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Sony Corporation

Home Audio Company

Shinagawa Tec Service Manual Production Group

Type IV tape, Sony Type IV (METAL) :
 EXCEPT KE200
 30–18,000 Hz (± 3 dB, IEC)
 30–13,000 Hz (± 3 dB, – 4 dB recording)
 20–19,000 Hz (± 6 dB)
 KE200
 30–15,000 Hz (± 3 dB, IEC)
 30–13,000 Hz (± 3 dB, – 4 dB recording)
 20–16,000 Hz (± 6 dB)

Wow and flutter

± 0.13% W. Peak (IEC)
 0.07% W. RMS (NAB)
 ±0.18% W. Peak (DIN)

Inputs

Line inputs (phono jacks)

Sensitivity: 0.16 V
 Input impedance: 47 kilohms

Outputs

Line outputs (phono jacks)

Rated output level: 0.5 V at a load impedance of
 47 kilohms
 Load impedance: Over 10 kilohms

Headphones (stereo phone jack)

Output level: 0.25 mW at a load impedance of
 32 ohms

General

Power requirements

Where purchased	Power requirements
US, Canadian model :	120 V AC, 60 Hz
AEP, UK, German, Malaysia, Singapore model :	220 - 230 V AC, 50/60 Hz
Australian model :	240 V AC, 50/60 Hz
E model :	110 - 120 V or 220 - 240 V AC, 50/60 Hz adjustable with the voltage selector

Power consumption

19 W (EXCEPT KE400S)
 20 W (KE400S)

Dimensions (approx.) (w/h/d)

430 × 120 × 310 mm (17 × 4 1/4 × 12 1/4 inches)
 incl. projecting parts and controls

Mass (approx.)

3.5 kg (7 lbs 11 oz)

Supplied accessories

Audio connecting cords (2)

Design and specifications are subject to change without notice.

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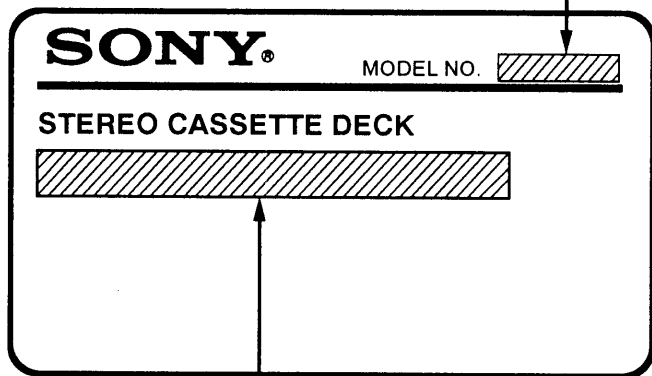
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7. ELECTRICAL PARTS LIST

MODEL IDENTIFICATION




US, Canadian model : AC 120V 60Hz
 Australian model : AC 240V~50/60Hz
 AEP, UK, German, Malaysia,
 Singapore model : AC 220-230V~50/60Hz
 E model : AC 110-120V or 220-240V~50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

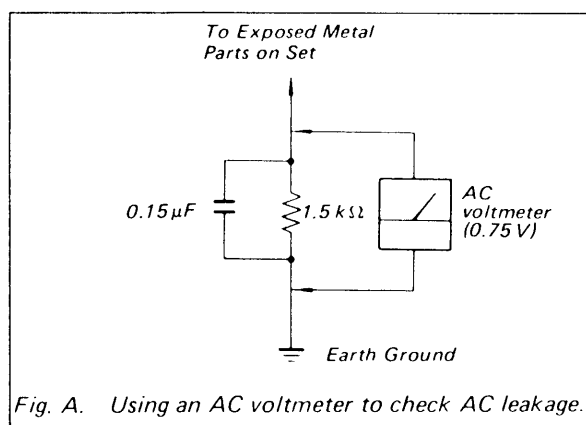
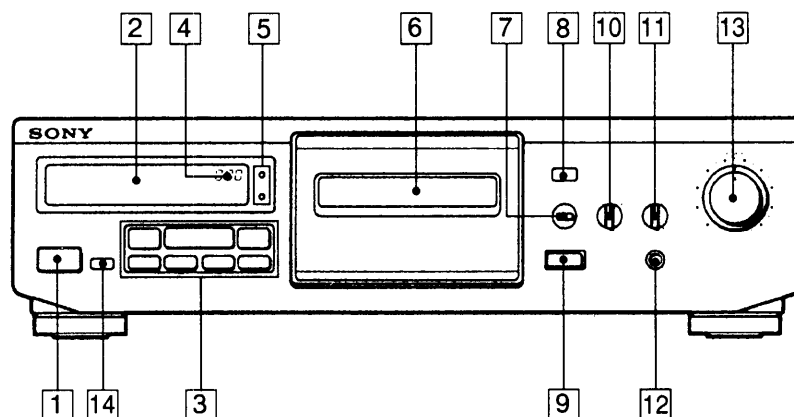


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 GENERAL

IDENTIFYING THE PARTS ON THE FRONT PANEL



- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 POWER switch</p> <p>2 Display panel</p> <p>3 Tape operation buttons</p> <p>◀◀ (rewind) (Multi-AMS™) button</p> <p>▶ (play) button (KE200/KE300/KE400S)</p> <p>◀/▶ (forward play and reverse play) button (RX300)</p> <p>▶▶ (fast-forward) (Multi-AMS™) button</p> <p>■ (stop) button</p> <p>⏸ PAUSE button</p> <p>○ REC MUTE (record muting) button</p> <p>● REC (record) button</p> <p>4 Tape counter</p> <p>5 Counter buttons</p> <p>RESET button</p> <p>MEMORY button</p> | <p>6 Cassette holder</p> <p>7 AUTO CAL button (EXCEPT KE200)</p> <p>8 Remote control sensor</p> <p>9 ⏏ (eject) button</p> <p>10 DOLBY NR (noise reduction) button</p> <p>11 BALANCE control</p> <p>12 PHONES jack (stereo phone jack)</p> <p>13 REC (recording) LEVEL control</p> <p>14 DIRECTION MODE switch (RX300 only)</p> <p>™AMS is an abbreviation for Automatic Music Sensor</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

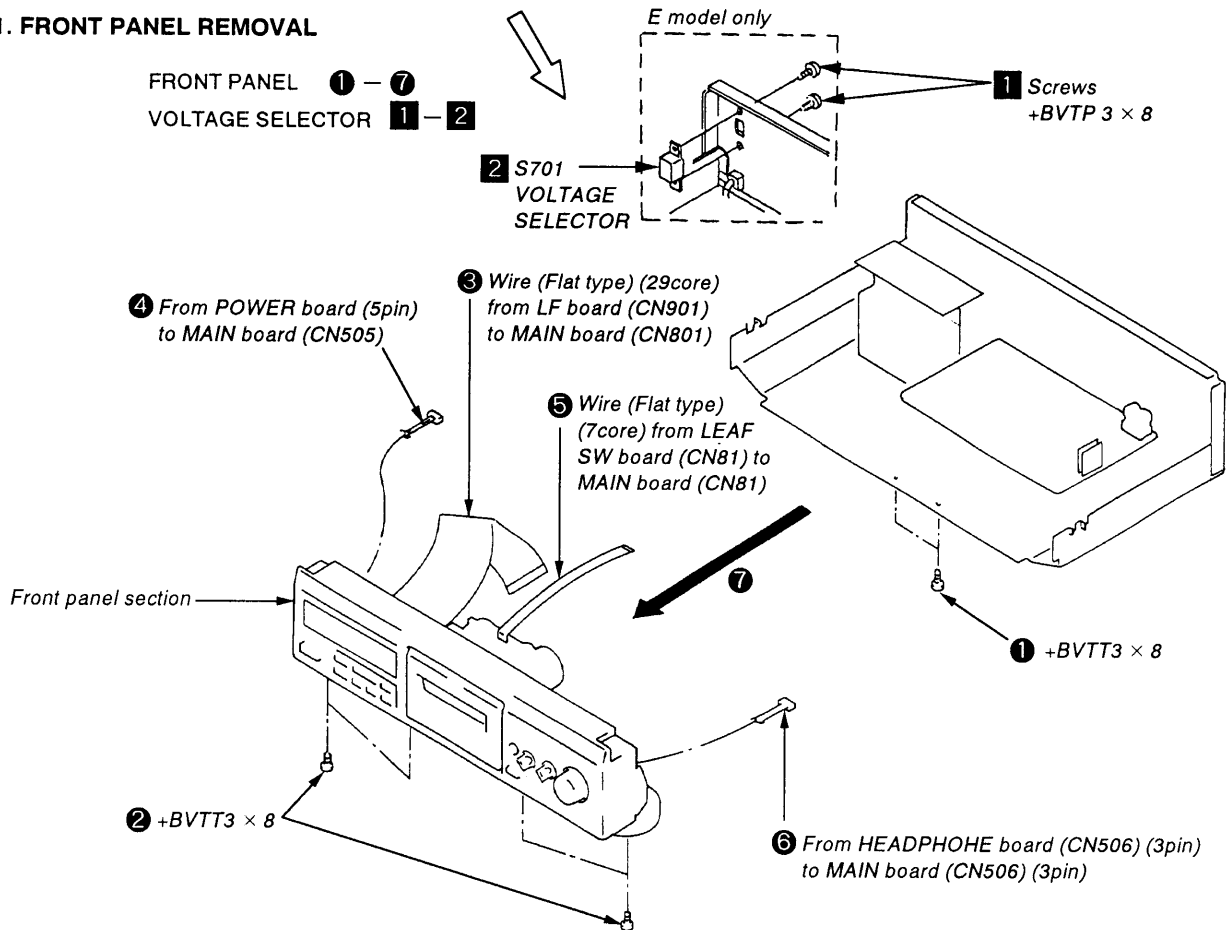
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

CASE

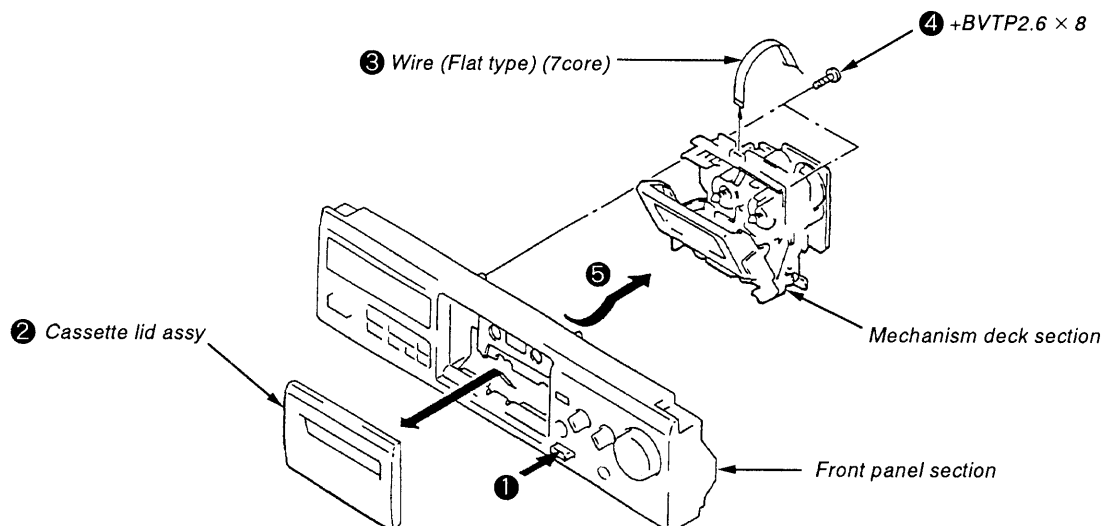
Unscrew the four case attachment screws M3 × 8 and remove the case.

2-1. FRONT PANEL REMOVAL



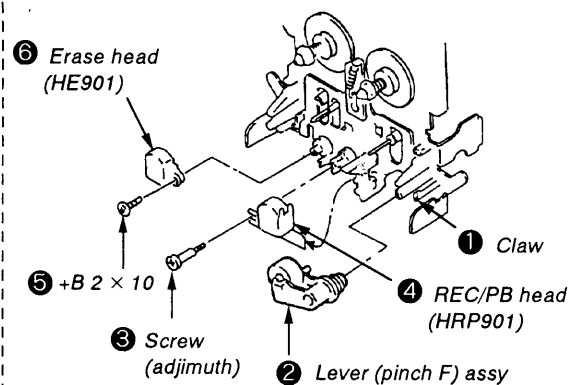
2-2. MECHANISM DECK SECTION REMOVAL

① Press the EJECT button.

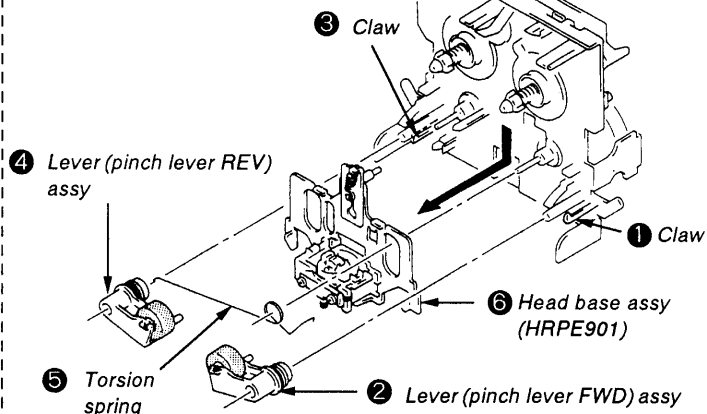


2-3. HEAD AND PINCH ROLLER REMOVAL

EXCEPT TC-RX300 :

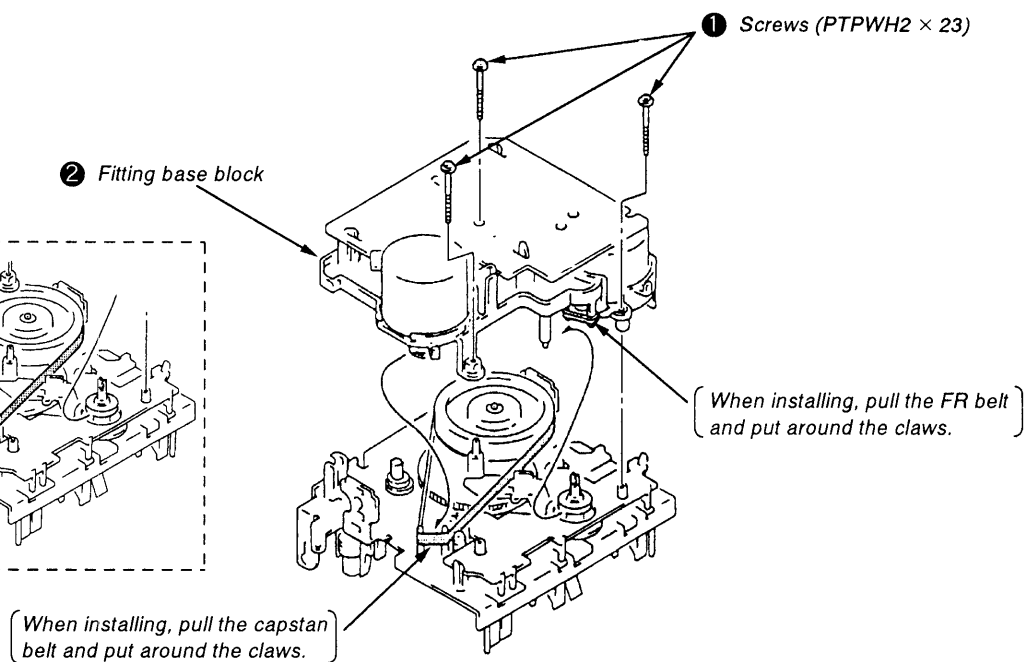
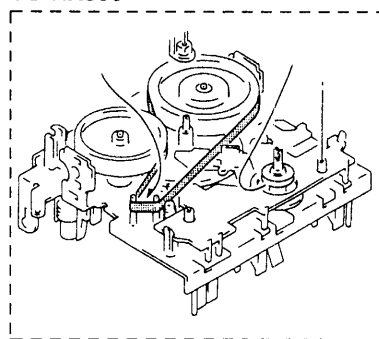


TC-RX300 :

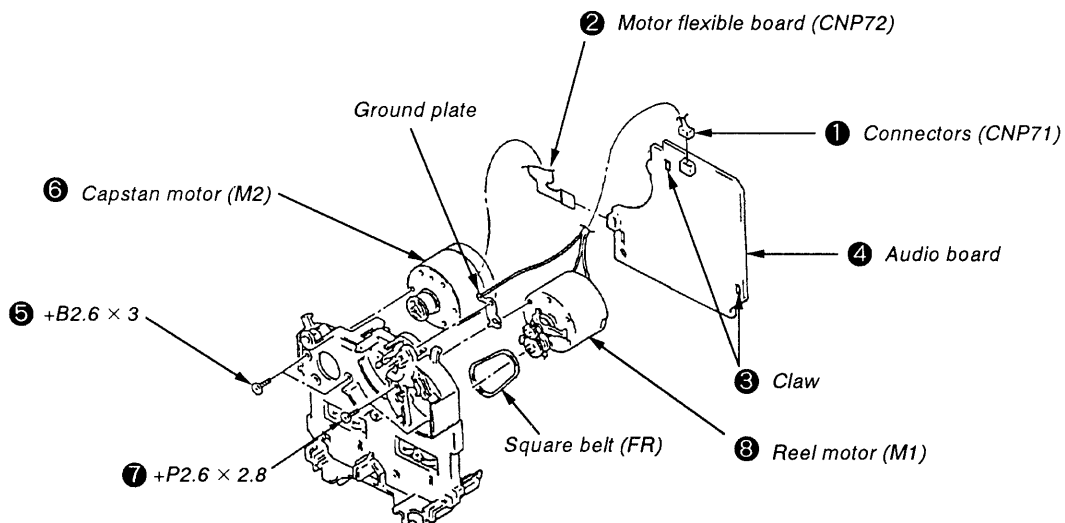


2-4. FITTING BASE BLOCK REMOVAL

TC-RX300



2-5. MOTOR REMOVAL



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback/erase head	pinch roller
rubber belts	capstan
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
Forward	CQ-102C	35 to 60g • cm (0.48 to 0.83 oz • inch)
Forward back tension	CQ-102C	2 to 60g • cm (0.03 to 0.08 oz • inch)
Reverse (RX300 only)	CQ-102RC	35 to 60g • cm (0.48 to 0.83 oz • inch)
Reverse back tension (RX300 only)	CQ-102RC	2 to 6g • cm (0.03 to 0.08 oz • inch)
FF/REW	CQ-201B	70 to 110g•cm (0.98 to 1.52 oz•inch)

Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (- 3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (- 3.8dB)

Test Tape

Tape	Contents	Use
P-4-A100	10kHz, - 10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

0dB=0.775V

Test Mode

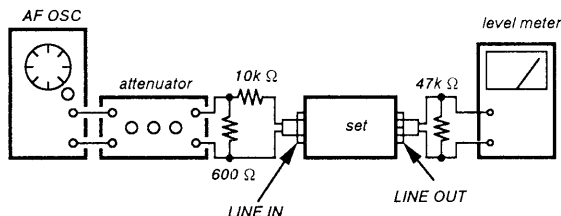
1. Insert a short-circuit plug into TP801 (2P) and turn ON the power switch. (Earth pin ⑦ of IC801 and turn ON the power switch.)
At first, all the fluorescent tubes light up, then the system returns to normal display. (However, "00 00" is not displayed on the counter.)
2. To release the test mode, remove the short plug and turn off the power switch.
3. Remove the short plug after completion of adjustment.

3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
 - Position of switches and controls knobs
DOLBY NR switch : OFF
 - Standard record position:
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

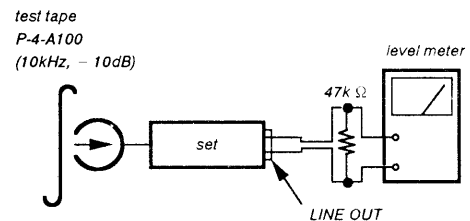
— Record Mode —



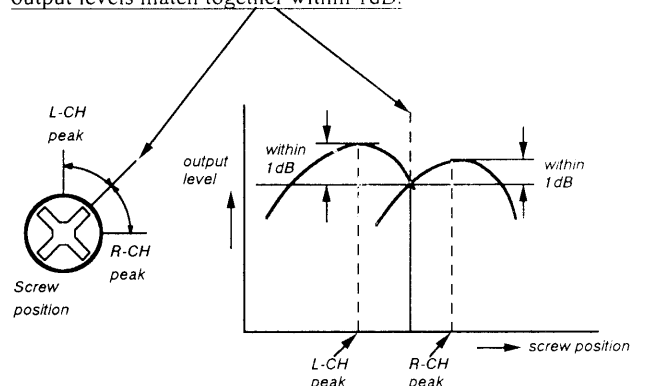
Record/Playback Head Azimuth Adjustment

Procedure :

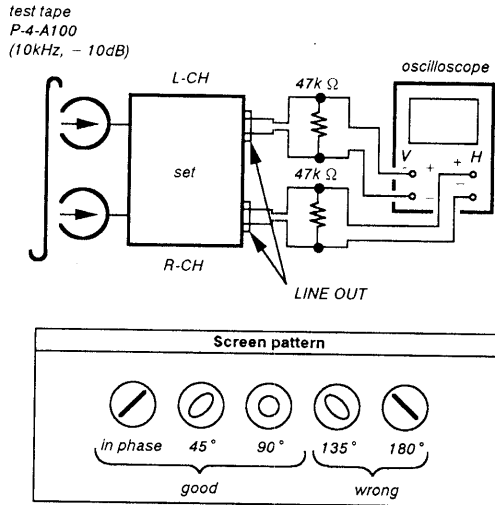
1. playback Mode



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

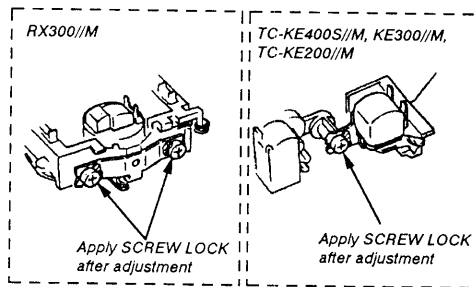


3. Phase check Playback Mode



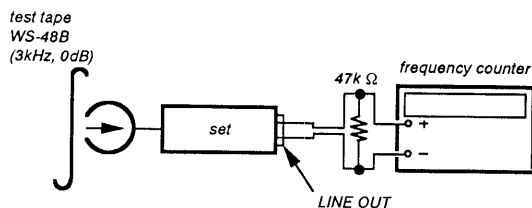
4. After the adjustment, lock the adjustment screws with suitable locking compound.

Adjustment Location : — record/playback head —



Tape Speed Adjustment

Procedure :
— Playback Mode —



1. Adjust RV71 so that the frequency counter reading becomes $3,000 \pm 10\text{Hz}$.
2. If, the frequency counter reading does not become $3,000 \pm 10\text{Hz}$. Turn RV72 and back to 1st. step again.

Note :

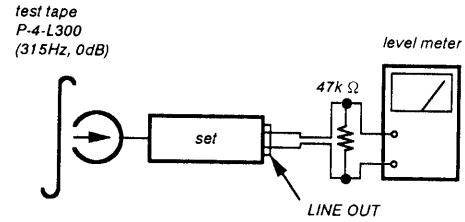
- Turn RV72 to clockwise — Tape speed becomes fast.
- Turn RV72 to counter clockwise — Tape speed becomes slow.

Frequency difference between the beginning and the end of the tape should be within 1%.

Adjustment Location : AUDIO board (Page 9)

Playback Level Adjustment

Procedure :
— Playback Mode —



Adjust RV11 (L-CH) and RV21 (R-CH) so the level meter reading becomes the adjustment limits below.

Adjustment Value :

LINE OUT level : $-7.7 \pm 0.5\text{dB}$ (0.301 to 0.338V)

Level difference between channels : within 0.5dB

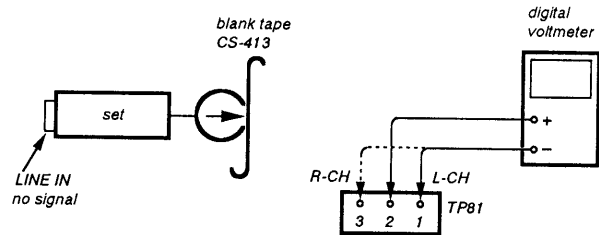
Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times

Adjustment Location : AUDIO board (Page 9)

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81, T91).

Procedure :
— Record Mode —



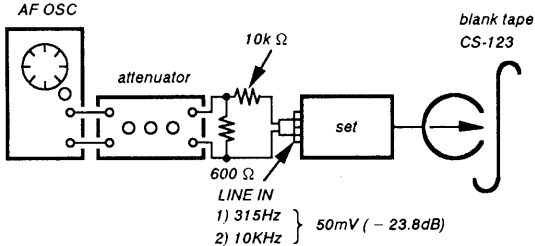
1. Connect the digital voltmeter to test point TP81.
2. Set RV81 (L-CH) and RV91 (R-CH) to mechanical center.
3. Set to record mode.
4. Adjust T81 (L-CH) and T91 (R-CH) so that the digital voltmeter reading becomes minimum.

Adjustment Location : AUDIO board (Page 9)

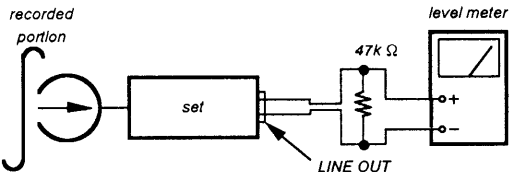
Record Bias Adjustment

Setting :
REC LEVEL control : standard record position (Refer to page 7)

Procedure :
1. Record Mode



2. Playback Mode



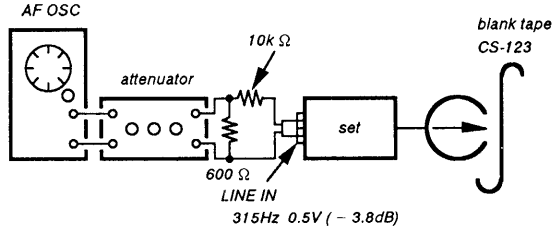
Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust semi-fixed resistor as shown below and repeat the steps given above.
TC-KE200 : RV12 (L-CH), RV22 (R-CH)
TC-KE300/KE400S/RX300 : RV81 (L-CH), RV91 (R-CH)

Adjustment Location : AUDIO board

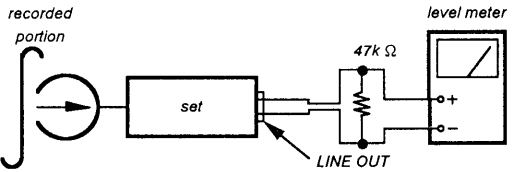
Record Level Adjustment

Setting :
REC LEVEL control : standard record position (Refer to page 7)

Procedure :
1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.
If necessary, adjust RV111 (L-CH), RV211 (R-CH) and repeat the steps 1 and 2.

SECTION 4
EXPLANATION OF IC TERMINALS

IC801 CXP82612-022Q (SYSTEM CONTROL)

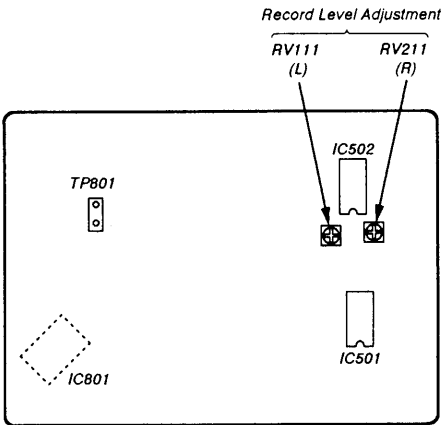
Pin No.	Pin name	I/O	Description
1	STOP SW	I	Mechanism stop switch input terminal.
2	SIRCS IN	I	SIRCS signal input terminal.
3	VRSION 2	I	Version selector.
4	NC	—	Not used.
5	NC	—	Not used.
6	NC	—	Not used.
7	MPX ON/OFF	O	MPX filter ON/OFF control terminal. OFF=L
8	CAL ON/OFF	O	Calibration ON/OFF control terminal.
9	REC CAL 0	I	REC calibration terminal.
10	REC CAL 1	O	REC calibration terminal.
11	GP CAL 0	O	GP calibration terminal.
12	GP CAL 1	I	GP calibration terminal.
13	LINE MUTE	O	Line mute ON/OFF. 0V=Mute
14	AMS IN	I	AMS signal input terminal.
15	NC	—	Not used.
16	REC MUTE	O	REC out mute terminal.
17	REEL —	O	Reel motor — control terminal.
18	REEL +	O	Reel motor+ control terminal.
19	BIAS	O	Bias ON/OFF.
20	RELAY	O	Relay selector terminal.
21	CAL KEY	I	Calibration ON/OFF switch input terminal.
22	METER L	I	Meter level L ch.
23	KEY X	I	Key switch input terminal.
24	KEY Y	I	Key switch input terminal.
25	METER R	I	Meter level R ch.
26	DOLBY AD	I	Dolby OFF/B/C/S select terminal.
27	HALF	I	Half pawl input terminal.
28	METAL CHROM	I	Metal, CrO ₂ tape selector terminal. "H" : Metal, CrO ₂
29	S. REEL	I	Supply pulse input terminal.
30	RESET	I	Reset terminal.
31	XO	O	System clock input terminal.
32	XI	I	System clock output terminal.
33	Vss	—	Ground.
34	BIAS CAL 0	O	Bias calibration terminal.
35	BIAS CAL 1	O	Bias calibration terminal.
36	BIAS CAL 2	O	Bias calibration terminal.
37	BIAS CAL 3	O	Bias calibration terminal.
38	CAP. M ON/OFF	O	Capstan motor ON/OFF terminal.
39	OSC H/L	O	OSC H/L control.
40	OSC ON/OFF	O	OSC ON/OFF control.

Adjustment Value :
LINE OUT level : $- 3.8 \pm 0.5\text{dB}$ (0.47 to 0.53V)

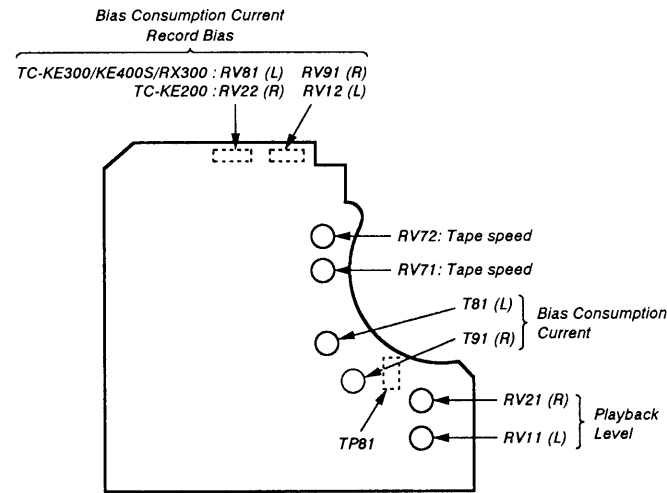
Adjustment Location : MAIN board

— Adjustment Parts Location Diagrams —

[MAIN BOARD]



[AUDIO BOARD]



Pin No.	Pin name	I/O	Description
41	BC/S	O	Dolby B, C/S select terminal.
42	DOLCON	O	Dolby B/C control terminal.
43	REC/PB	O	Recording/Playback selector for dolby IC.
44	NC	—	Not used.
45	NC	—	Not used.
46	S1	O	Fluorescent indicator tube segment output.
47	S2	O	Fluorescent indicator tube segment output.
48	S3	O	Fluorescent indicator tube segment output.
49	S4	O	Fluorescent indicator tube segment output.
50	S5	O	Fluorescent indicator tube segment output.
51	S6	O	Fluorescent indicator tube segment output.
52	S7	O	Fluorescent indicator tube segment output.
53	S8	O	Fluorescent indicator tube segment output.
54	S9	O	Fluorescent indicator tube segment output.
55	S10	O	Fluorescent indicator tube segment output.
56	S11	O	Fluorescent indicator tube segment output.
57	S12	O	Fluorescent indicator tube segment output.
58	S13	O	Fluorescent indicator tube segment output.
59	S14	O	Fluorescent indicator tube segment output.
60	S15	O	Fluorescent indicator tube segment output.
61	S16	O	Fluorescent indicator tube segment output.
62	S17	O	Fluorescent indicator tube segment output.
63	NC	—	Not used.
64	NC	—	Not used.
65	NC	—	Not used.
66	G5	O	Fluorescent indicator tube grid output.
67	G4	O	Fluorescent indicator tube grid output.
68	G3	O	Fluorescent indicator tube grid output.
69	G2	O	Fluorescent indicator tube grid output.
70	G1	O	Fluorescent indicator tube grid output.
71	V-DISP	—	Fluorescent indicator tube power supply. (- 20V)
72	VDD	—	Power supply. (+5V)
73	NC	—	Not used.
74	NC	—	Not used.
75	VDD	—	Power supply. (+5V)
76	POWER IN	I	0V= Power OFF
77	POWER OUT	O	Power ON/OFF. ON=0V
78	VDD	—	Power supply. (+5V)
79	TEST MODE	I	Test mode selector. 0V= Test mode
80	VERSION 1	I	Version selector.

SECTION 5
DIAGRAMS

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D131	D-11	IC511	F-16
D132	D-11	IC601	B-9
D231	D-11	IC701	G-10
D232	D-12	IC801	C-8
D511	B-13	IC802	E-8
D512	B-13	Q101	B-14
D513	F-13	Q102	C-14
D551	B-11	Q121	G-12
D701	H-8	Q122	D-13
D702	H-8	Q201	A-14
D703	G-8	Q202	C-16
D704	G-8	Q221	G-12
D705	G-8	Q222	E-13
D706	G-8	Q503	G-14
D707	G-8	Q504	G-14
D708	H-9	Q505	F-14
D709	H-11	Q511	C-13
D710	G-9	Q512	C-13
D711	G-10	Q521	G-14
D712	F-9	Q531	C-11
D713	G-7	Q532	C-11
D714	F-9	Q551	B-11
D715	G-10	Q572	F-13
D801	E-8	Q573	D-13
D802	E-8	Q601	C-10
IC501	D-15	Q701	H-12
IC502	G-15	Q702	H-11
IC503	D-13	Q703	H-9
IC504	D-11	Q704	H-10
IC505	D-11	Q705	G-10
IC506	B-15	Q706	G-9
IC507	C-13	Q707	F-9
IC508	B-10	Q708	F-8
IC509	D-10	Q803	B-7
IC510	C-12	Q805	E-8

Note:

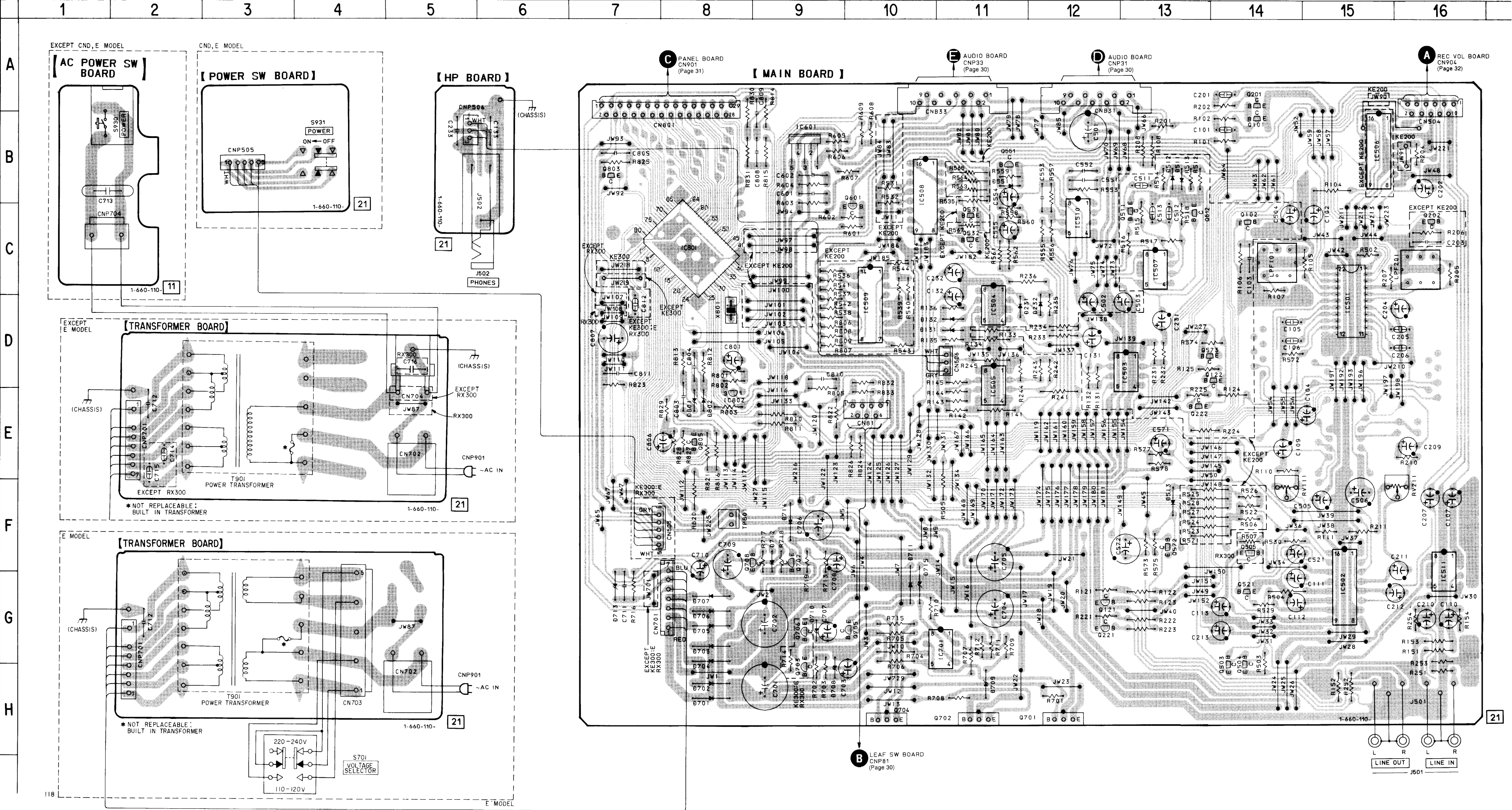
- : parts extracted from the component side.
- △ : internal component.
- Pattern from the side which enables seeing. (The other layers' patterns are not indicated)

Caution:

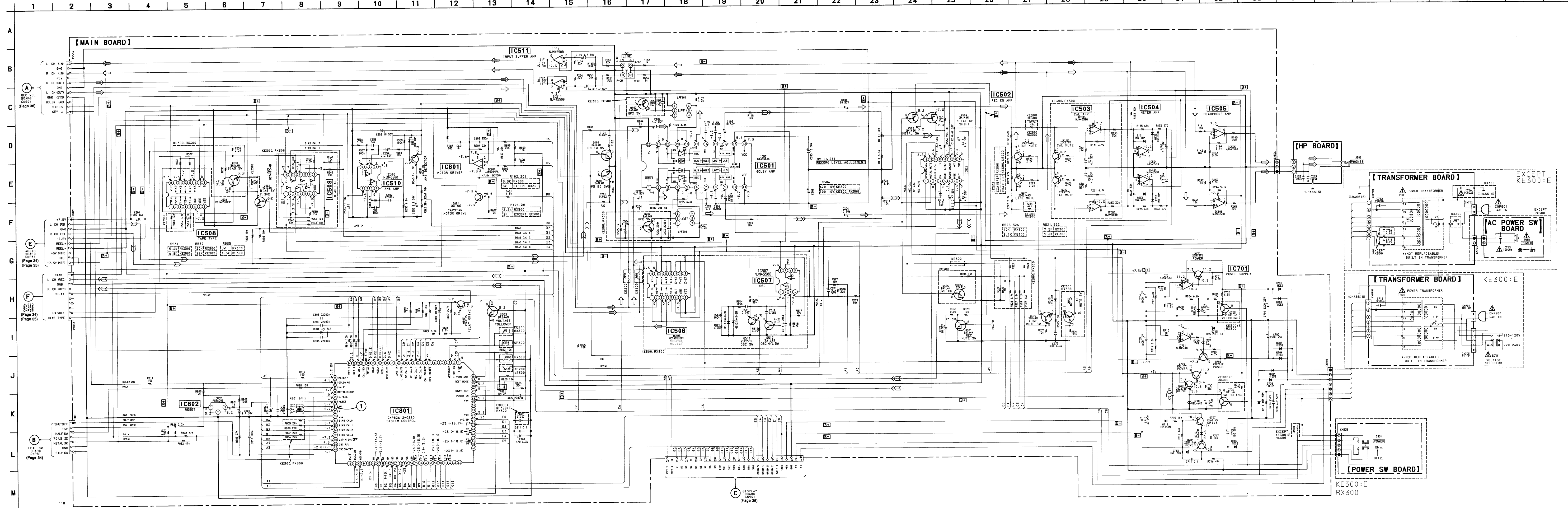
Pattern face side : Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.

Parts face side : Parts on the parts face side seen from the (Component side) parts face are indicated.

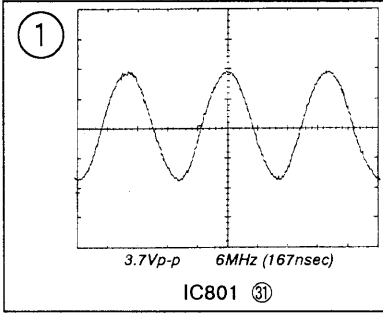
• Abbreviation
CND : Canadian



5-2. SCHEMATIC DIAGRAM — MAIN SECTION — (TC-KE200/KE300/RX300) • Refer to page 28 for IC Block Diagram.



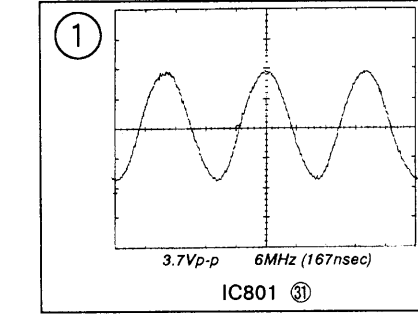
• WAVEFORM



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- [] : panel designation.
- B+ : B+ Line
- B- : B- Line
- [] : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : PLAYBACK
() : REC
* : can not be measured.
- Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
→ : LINE
⇄ : PB
⇄ : REC
- Abbreviation
CND : Canadian

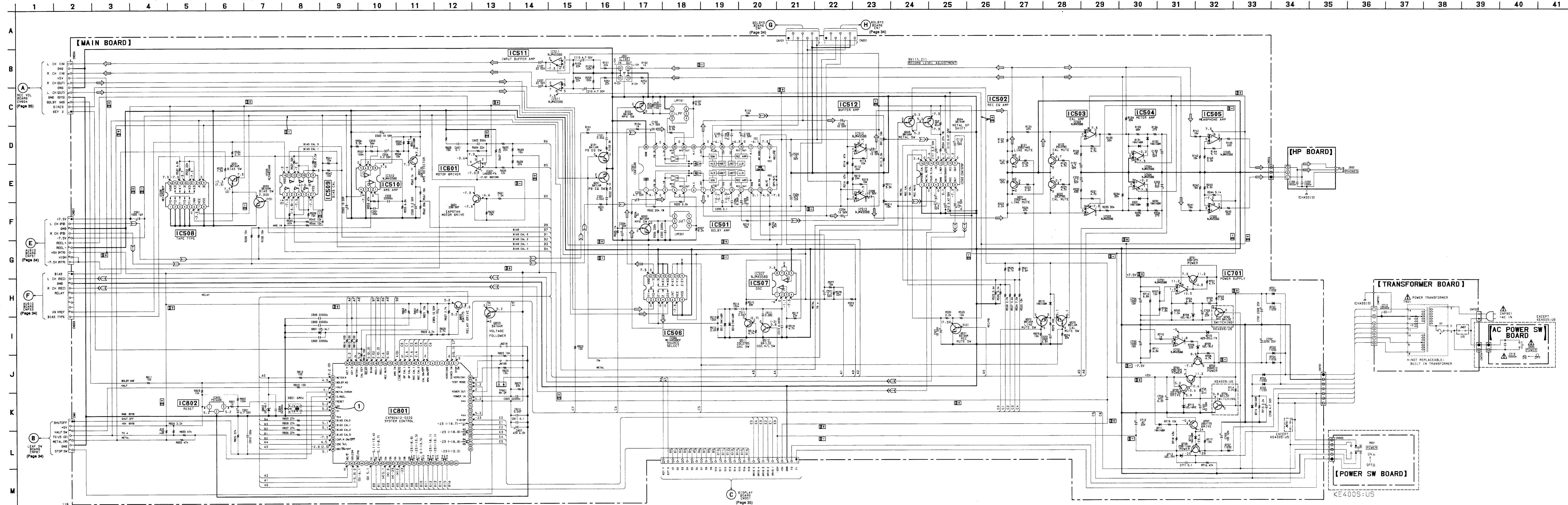
• WAVEFORM

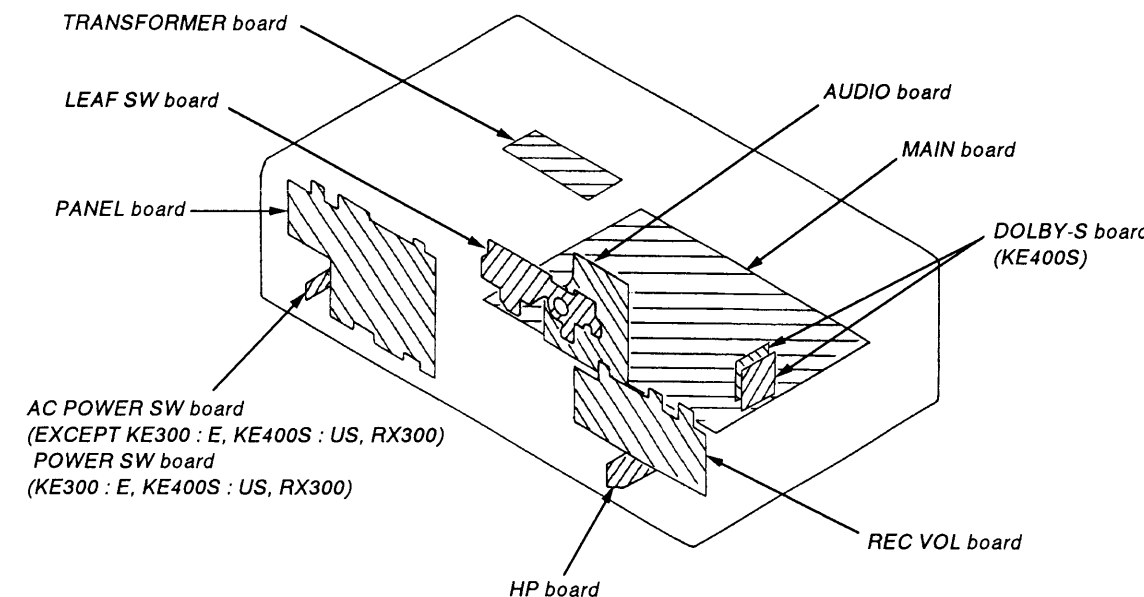
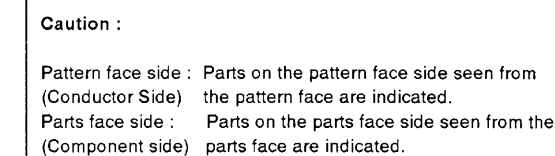


Note :

- All capacitors are in μ F unless otherwise noted. pF: μ F μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}$ W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- \square : panel designation.
- **B+** : B+ Line
- **B-** : B- Line
- \square : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : PLAYBACK
- () : REC
- * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - \Rightarrow : LINE
 - \Rightarrow : PB
 - \Rightarrow : REC

5-3. SCHEMATIC DIAGRAM - MAIN SECTION - (TC-KE400S) Refer to page 28 for IC Block Diagram.





● SEMICONDUCTOR LOCATION

Ref. No.	Location
D31	H - 1
IC1	I - 2
IC81	H - 7 (LEAF SW BOARD)
Q51	H - 2
Q52	G - 2
Q53	H - 2
Q71	H - 3

● SEMICONDUCTOR LOCATION

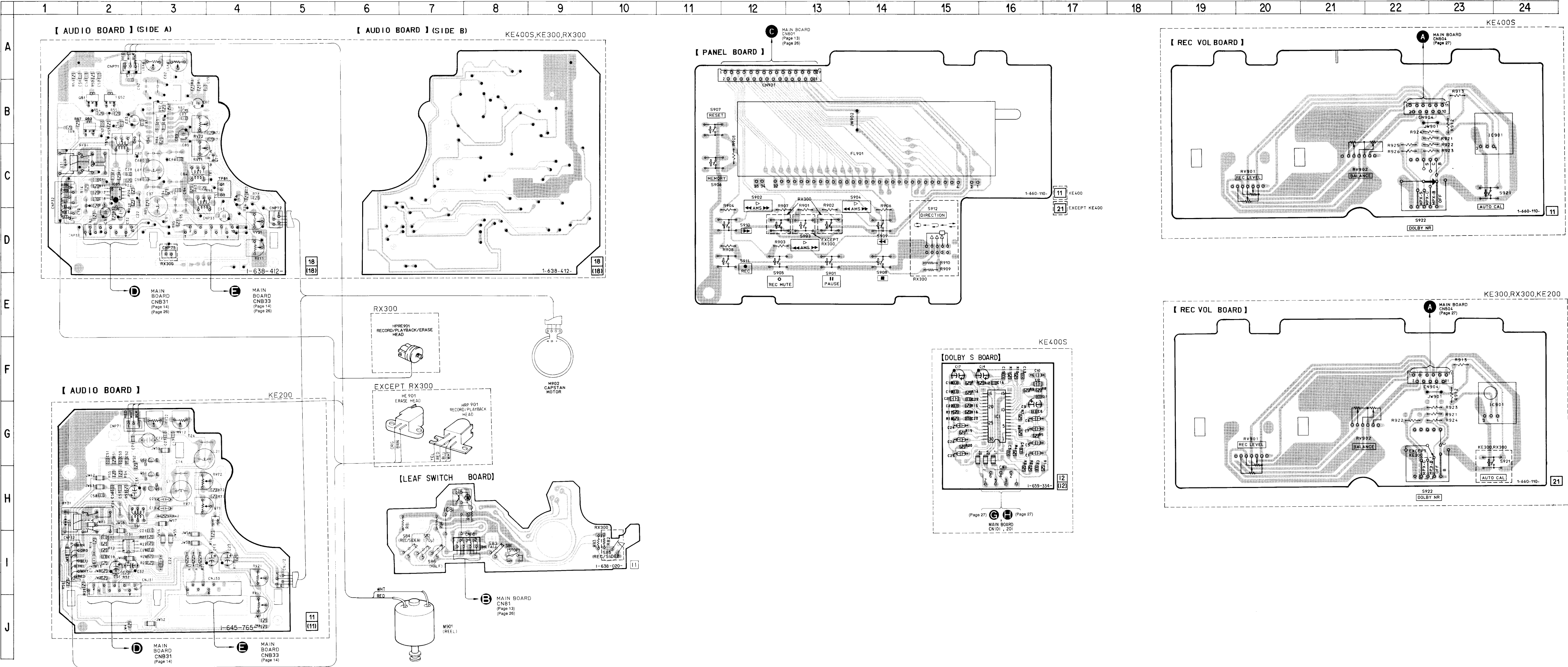
Ref. No.	Location
D31	C - 1
IC1	G - 16 (KE400S)
IC31	C - 2
IC81	B - 3 (AUDIO BOARD)
IC81	H - 7 (LEAF SW BOARD)
IC901	B - 23 (KE400S)
IC901	G - 23 (KE200/KE300/RX300)
Q51	B - 2
Q52	B - 2
Q53	B - 1
Q71	C - 3

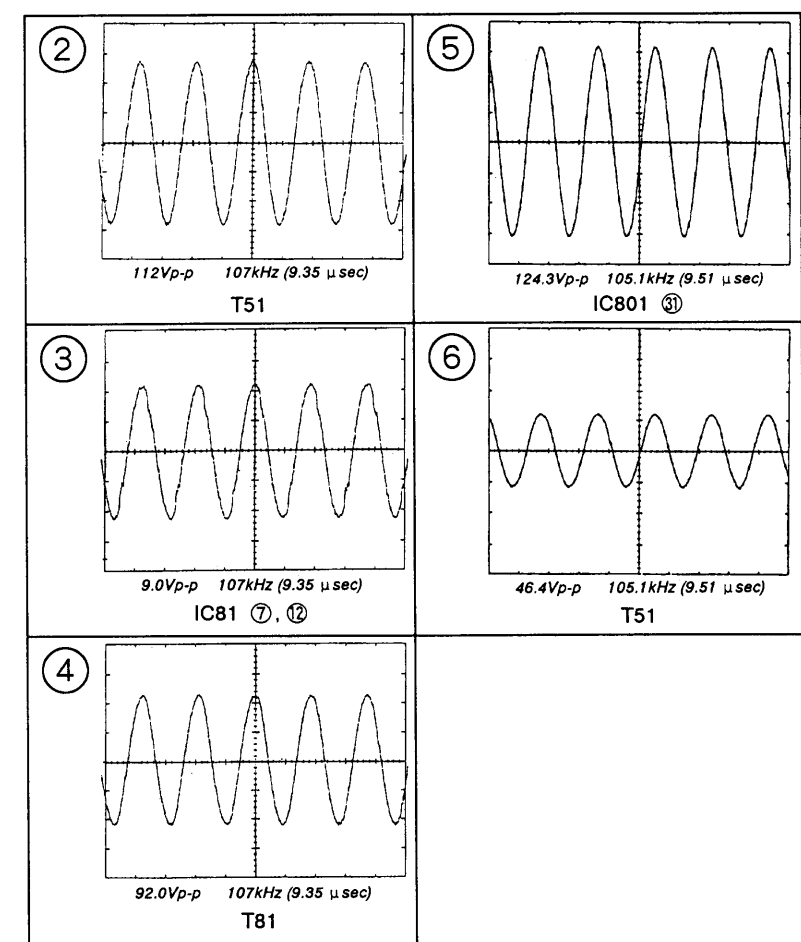
Note:

- : parts extracted from the component side.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)

Caution :

Pattern face side : Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.
Parts face side : Parts on the parts face side seen from the (Component side) parts face are indicated.








Note :

- All capacitors are in μF unless otherwise noted, pF: $\mu \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- : panel designation.

Note :

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- **B₊** : B₊ Line

P : P line

• **B** : B = Line

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
 - Voltages are taken with a VOM (Input impedance $10M \Omega$).
 - Voltage variations may be noted due to normal production tolerances.
 - Waveforms are taken with a oscilloscope.
 - Voltage variations may be noted due to normal production tolerances.
 - Circled numbers refer to waveforms.
 - Signal path.
- Σ : PB

\Rightarrow : REC

SECTION 6 EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE) ... (RED)

↑ ↑
Parts color Cabinet's color

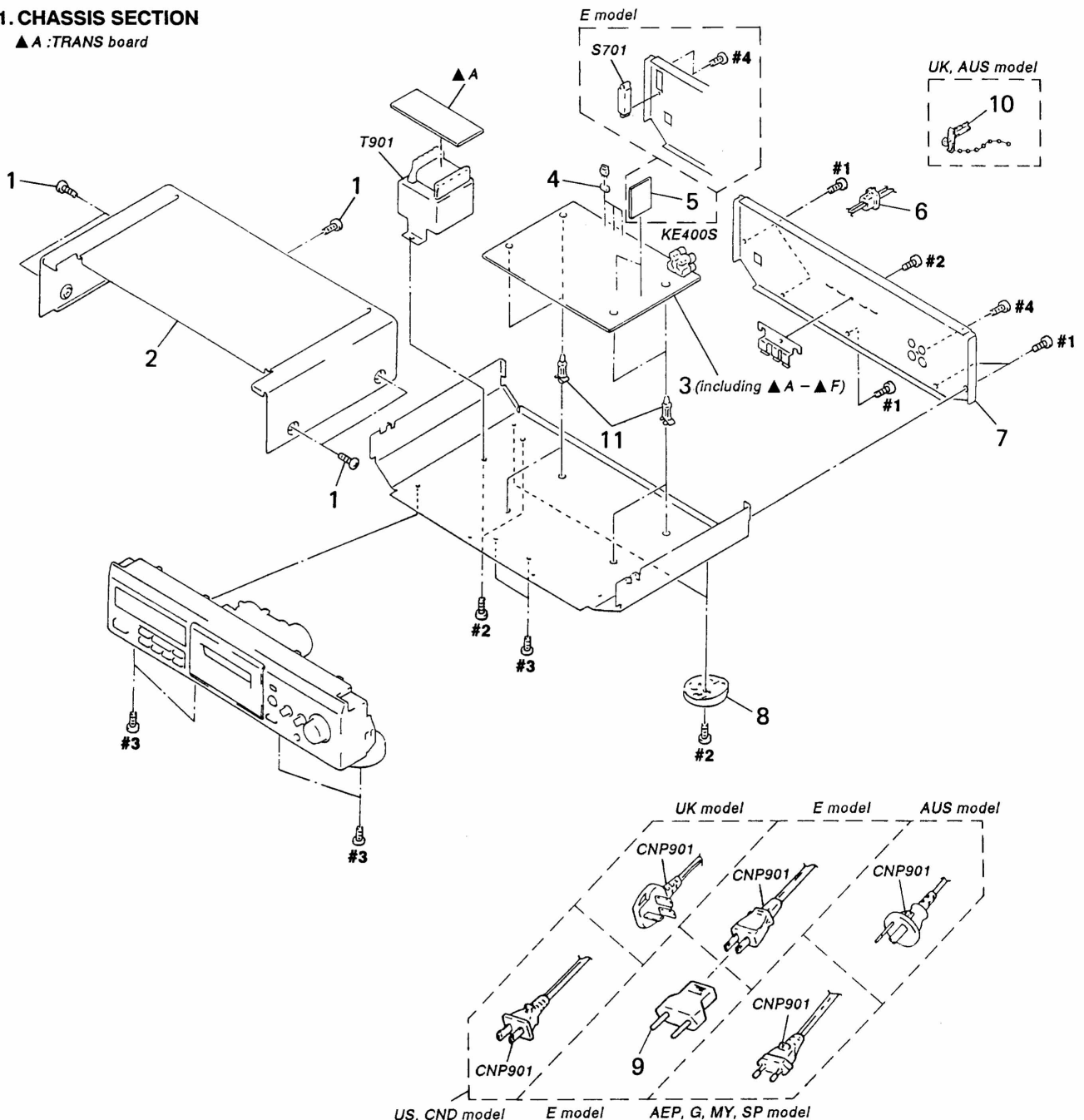
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CND : Canadian SP : Singapore
AUS : Australian MY : Malaysia
G : German

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS SECTION

\triangle A : TRANS board



Ref. No.	Part No.	Description	Remark
1	3-704-366-01	SCREW (CASE) (M3X8)...(BLACK)	
1	3-704-366-71	SCREW (CASE) (M3X8)...(SILVER) (KE400S)	
* 2	3-931-432-01	CASE (410726)...(BLACK)	
* 2	3-931-432-21	CASE (410726)...(SILVER) (KE400S)	
* 3	A-2007-523-A	MAIN BOARD, COMPLETE (KE200)	
* 3	A-2007-524-A	MAIN BOARD, COMPLETE (KE400S:EXCEPT US)	
* 3	A-2007-525-A	MAIN BOARD, COMPLETE (KE400S:US)	
* 3	A-2007-526-A	MAIN BOARD, COMPLETE (KE300:EXCEPT E)	
* 3	A-2007-527-A	MAIN BOARD, COMPLETE (KE300:E)	
* 3	A-2007-591-A	MAIN BOARD, COMPLETE (RX300)	
* 4	3-923-762-11	HOLDER (TR)	
* 5	A-2007-481-A	DOLBY-S BOARD, COMPLETE (KE400S)	
* 6	3-703-244-00	BUSHING (2104), CORD (EXCEPT US,E,CND)	
6	3-703-571-11	BUSHING (S) (4516), CORD (US,E,CND)	
* 7	3-933-281-01	PANEL, BACK (KE400S:US)	
* 7	3-933-281-12	PANEL, BACK (KE400S:AEP,G)	
* 7	3-933-281-21	PANEL, BACK (KE400S:UK)	
* 7	3-933-281-31	PANEL, BACK (KE400S:AUS)	
* 7	3-933-281-41	PANEL, BACK (KE300:AEP,G,MY,SP)	
* 7	3-933-281-51	PANEL, BACK (KE300:AUS)	
* 7	3-933-281-61	PANEL, BACK (KE300:E)	
* 7	3-933-281-81	PANEL, BACK (RX300)	

Ref. No.	Part No.	Description	Remark
* 7	3-933-307-01	PANEL, BACK (KE200:AEP,G)	
* 7	3-933-307-11	PANEL, BACK (KE200:UK)	
8	X-4947-207-1	FOOT ASSY (F50150S) (EXCEPT US,CND)	
8	X-4947-208-1	FOOT ASSY (F50150S) (US,CND)	
△ 9	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
10	4-956-370-12	BAND, PLUG FIXED (UK,AUS)	
* 11	3-346-265-31	HOLDER, PC BOARD	
△ CNP901	1-558-945-21	CORD, POWER (POLAR.SPT-1) (US,CND)	
△ CNP901	1-575-651-21	CORD, POWER (AEP,G,MY,SP)	
△ CNP901	1-696-027-11	CORD, POWER (E)	
△ CNP901	1-696-586-11	CORD, POWER (UK)	
△ CNP901	1-696-845-11	CORD, POWER (AUS)	
△ CNP901	1-751-523-11	CORD, POWER (UK)	
△ S701	1-570-046-21	SWITCH, VOLTAGE CHANGE (E)	
△ T901	1-426-651-11	TRANSFORMER, POWER (KE200,KE300:EXCEPT E)	
△ T901	1-426-652-11	TRANSFORMER, POWER (KE300:E)	
△ T901	1-427-743-11	TRANSFORMER, POWER (RX300)	
△ T901	1-427-751-11	TRANSFORMER, POWER (KE400S:EXCEPT US)	
△ T901	1-427-752-11	TRANSFORMER, POWER (KE400S:US)	

6-2. FRONT PANEL SECTION

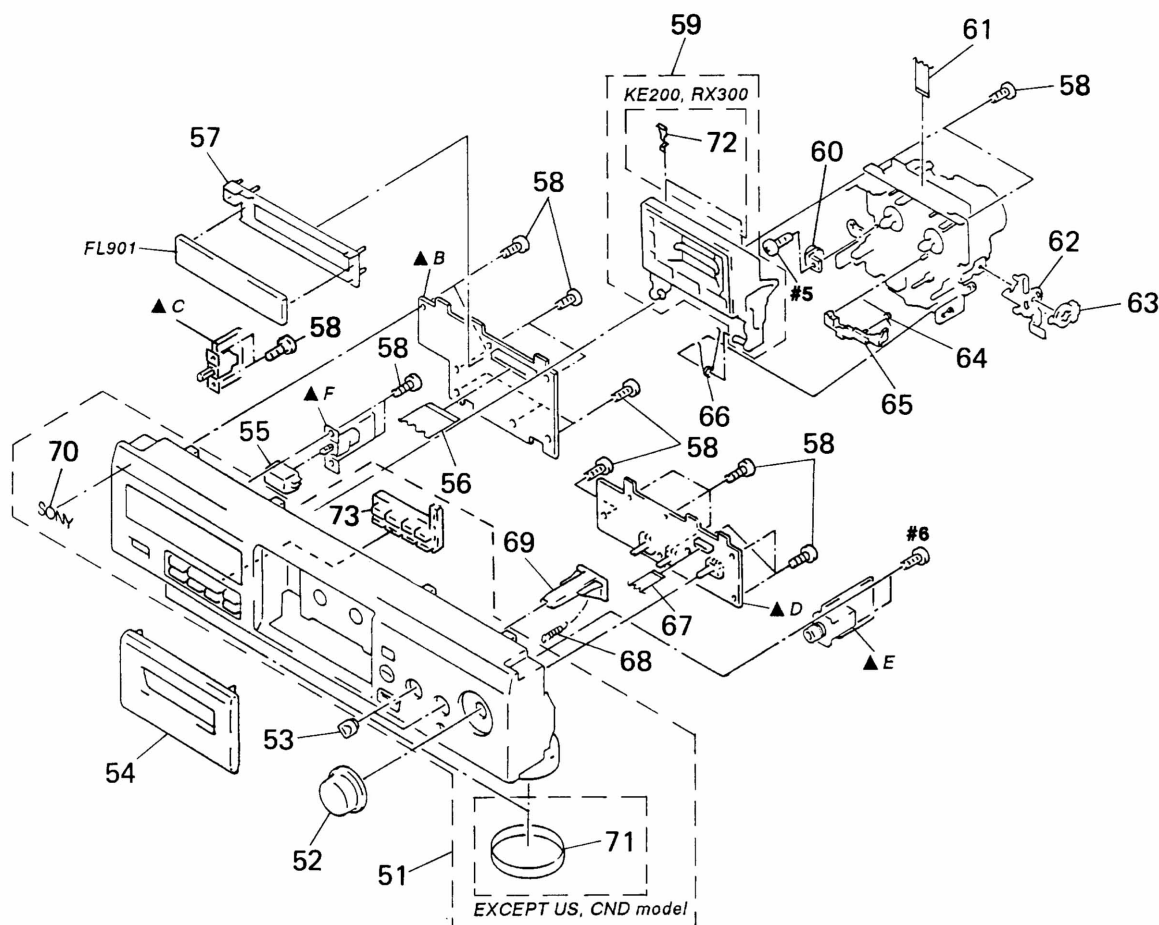
▲ B : PANEL board

▲ C : POWER SW board (US, CND, E)

▲ D : REC VOL board

▲ E : HP board

▲ F : AC POWER SW board (EXCEPT US, CND, E)



Ref. No.	Part No.	Description	Remark
51	X-3371-687-1	PANEL ASSY, FRONT...(SILVER) (KE400S)	
51	X-3371-687-2	PANEL ASSY, FRONT...(BLACK) (KE400S: EXCEPT US)	
51	X-3371-688-2	PANEL ASSY, FRONT...(BLACK) (KE300)	
51	X-3371-690-2	PANEL ASSY, FRONT...(BLACK) (KE200)	
51	X-3371-694-2	PANEL ASSY, FRONT...(BLACK) (KE400S: US)	
51	X-3371-696-2	PANEL ASSY, FRONT...(BLACK) (RX300)	
52	3-939-300-11	KNOB (REC)...(BLACK)	
52	3-939-300-21	KNOB (REC)...(SILVER) (KE400S)	
53	3-933-299-01	KNOB (DIA. 12)...(BLACK)	
53	3-933-299-11	KNOB (DIA. 12)...(SILVER) (KE400S)	
54	X-3371-686-1	LID ASSY, CASSETTE...(SILVER) (KE400S)	
54	X-3371-691-2	LID ASSY, CASSETTE...(BLACK) (KE400S, KE300)	
54	X-3371-692-2	LID ASSY, CASSETTE...(BLACK) (RX300)	
54	X-3371-693-2	LID ASSY, CASSETTE...(BLACK) (KE200)	
55	3-931-429-01	BUTTON (POWER)	
56	1-773-287-11	WIRE (FLAT TYPE) (29 CORE)	
* 57	3-377-337-11	HOLDER (FL)	
58	4-951-620-01	SCREW (2.6X8), +BVTP	
59	A-4325-164-A	HOLDER (R) ASSY, CASSETTE (KE200, RX300)	
59	X-3368-119-1	HOLDER (R) ASSY, CASSETTE (KE300, KE400S)	
60	3-354-963-01	DAMPER	

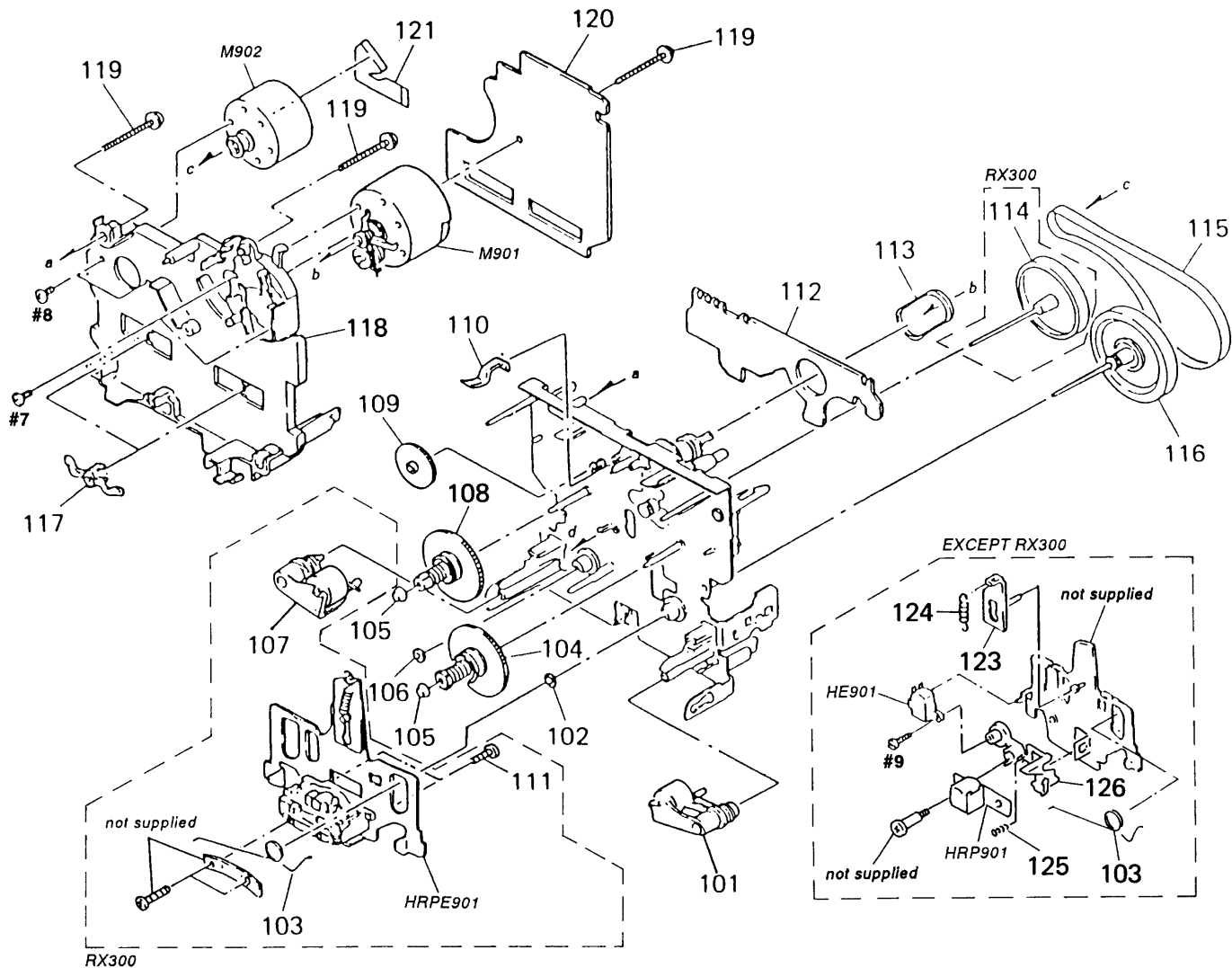
Ref. No.	Part No.	Description	Remark
61	1-765-318-11	WIRE (FLAT TYPE) (7 CORE)	
* 62	3-354-954-01	LEVER (LOCK LEVER R)	
63	3-354-957-01	JOINT (LOCK LEVER)	
64	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
65	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
66	3-354-960-01	SPRING (LOADING R), TORSION	
67	1-769-947-11	WIRE (FLAT TYPE) (11 CORE)	
68	3-937-169-01	SPRING, TENSION	
69	3-933-295-01	BUTTON (EJECT)	
70	4-963-404-21	EMBLEM (5-A), SONY	
71	4-977-593-11	RING (DIA 50), ORNAMENTAL (EXCEPT US, CND)	
72	3-308-823-11	DETENT, CASSETTE (KE200, RX300)	
73	3-933-293-01	BUTTON (FWD) (EXCEPT RX300)	
73	3-933-294-01	BUTTON (REV) (RX300)	
FL901	1-517-173-11	INDICATOR TUBE, FLUORESCENT (KE200, KE300, RX300)	
FL901	1-517-374-11	INDICATOR TUBE, FLUORESCENT (KE400S)	

6-3. MECHANISM SECTION 1

TC-KE200 : TCM-190VB22CS

TC-KE300/KE400S : TCM-190VB12CS

TC-RX300 : TCM-190RB12C



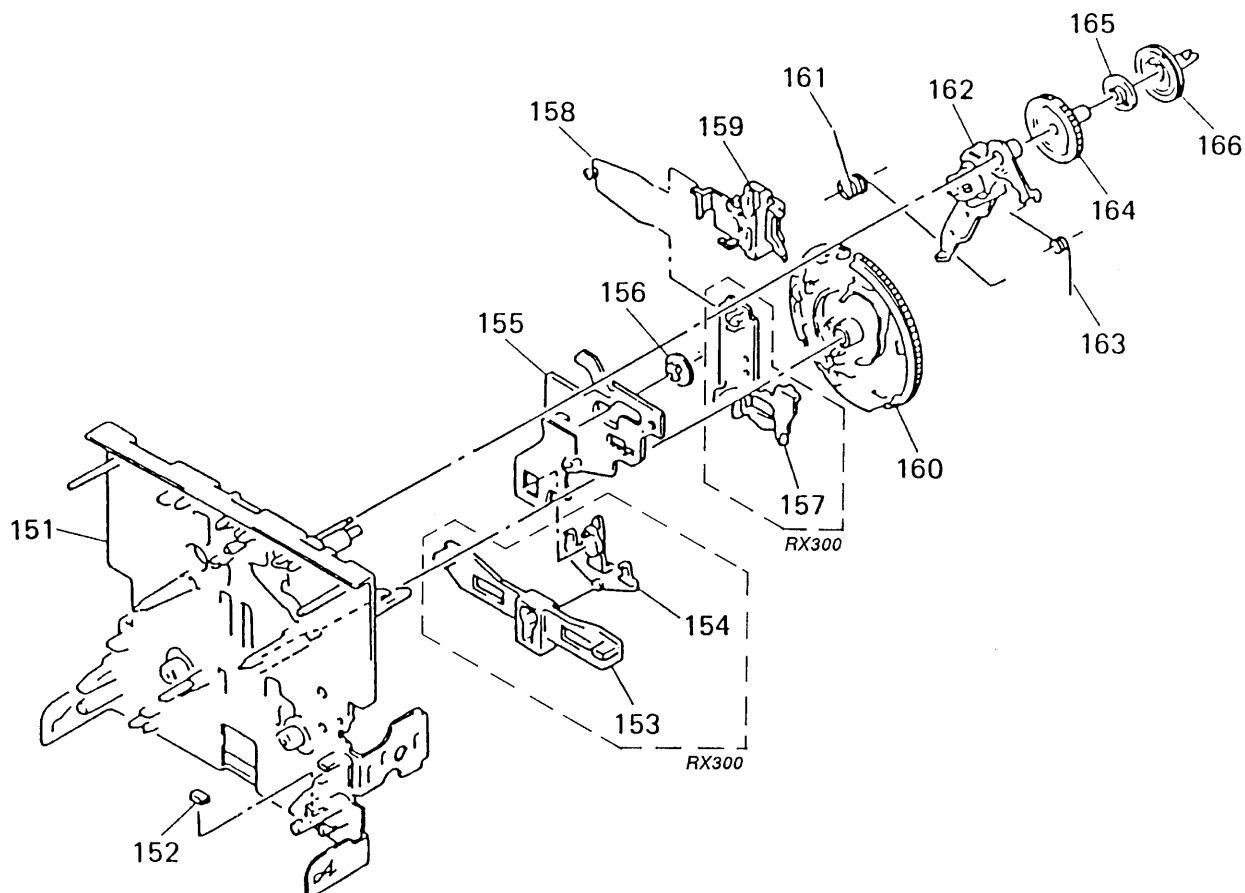
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3366-047-1	LEVER (PINCH F) ASSY		118	3-359-436-11	BASE (THRUST RETAINER),FITTING	
102	3-356-713-01	WASHER		119	3-359-414-01	SCREW (+PTPWH 2X23)	
103	3-907-362-01	SPRING, TORSION		* 120	A-2006-890-A	AUDIO BOARD, COMPLETE (KE400S,KE300)	
104	X-3366-970-1	TABLE ASSY, REEL		* 120	A-2007-040-A	AUDIO BOARD, COMPLETE (RX300)	
105	3-362-308-01	CAP (REEL)		* 120	A-2007-171-A	AUDIO BOARD, COMPLETE (KE200)	
106	3-356-714-01	WASHER (RX300)		121	1-638-983-11	MOTOR FLEXIBLE BOARD	
107	X-3366-048-1	LEVER (PINCH R) ASSY (RX300)		* 123	X-3368-865-1	SLIDER (LIMITER) ASSY (EXCEPT RX300)	
108	X-3366-971-1	TABLE ASSY (B), REEL		124	3-363-868-01	SPRING (HEAD CHASSIS), TENSION	(EXCEPT RX300)
109	3-359-424-01	GEAR (REV GEAR)		125	3-343-484-01	SPRING, COMPRESSION (EXCEPT RX300)	
110	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF		* 126	3-359-445-11	HOLDER (1 WAY HEAD)(EXCEPT RX300)	
111	3-388-848-01	SCREW (P2X6) (B TIGHT)(RX300)		HE901	1-543-673-11	HEAD, MAGNETIC (ERASE)(EXCEPT RX300)	
* 112	1-638-020-11	LEAF SW BOARD		HRP901	1-543-919-11	HEAD,MAGNETIC(RECORD/PLAYBACK)	(EXCEPT RX300)
113	3-359-466-01	BELT (FR), SQUARE		HRPE901A-2004-527-A	DECK ASSY, HEAD (RECORD/PLAYBACK/ERASE)	(RX300)	
114	X-3367-630-1	FLYWHEEL (REV) ASSY (RX300)					
115	3-359-417-01	BELT (FLAT), CAPSTAN (RX300)					
115	3-359-467-01	BELT (1 WAY FLAT BELT) (EXCEPT RX300)		M901	X-3363-501-1	MOTOR ASSY,REEL (REEL)	
116	X-3367-629-1	FLYWHEEL (1WD) ASSY		M902	X-3365-377-2	MOTOR ASSY,CAPSTAN (CAPSTAN)	
117	3-575-321-00	RETAINER, THRUST, CAPSTAN					

6-4. MECHANISM SECTION 2

TC-KE200 : TCM-190VB22CS

TC-KE300/KE400S : TCM-190VB12CS

TC-RX300 : TCM-190RB12C



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3359-415-1	CHASSIS ASSY, MECHANICAL		160	3-359-420-01	GEAR (CAM GEAR)(KE200)	
152	3-359-469-01	SPACER		160	3-936-483-01	GEAR (CAM GEAR)(EXCEPT KE200)	
153	3-359-425-01	SLIDER (REVERSE SLIDER)(RX300)		161	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
154	3-359-426-01	LEVER (REVERSE LEVER)(RX300)		162	X-3366-569-1	ARM ASSY, FR	
* 155	3-359-415-01	SLIDER (TRIGGER SLIDER)		163	3-924,187-11	S+RING (FR ARM), TORSION	
156	3-359-448-01	GEAR (TRIGGER)		164	3-359-419-11	GEAR (FR GEAR)	
157	3-359-427-01	SLIDER (LEVERSE SLIDER)(RX300)		165	3-359-421-01	CLUTCH (REEL DISK)	
158	3-359-454-01	SPRING, TORSION		166	3-359-418-01	PULLEY (FR PULLEY)	
159	3-359-429-01	SLIDER (BRAKE PLATE)					

SECTION 7

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal oxide-film resistor
F : nonflammable
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

● SEMICONDUCTORSIn each case, u : μ , for example :uA..... : μ A....., uPA..... : μ PA.....uPB..... : μ PB....., uPC..... : μ PC.....uPD..... : μ PD.....**● CAPACITORS**uF : μ F**● COILS**uH : μ H**● Abbreviation**

CND : Canadian

AUS : Australian

G : German

SP : Singapore

MY : Malaysia

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark	
*	A-2006-890-A	AUDIO BOARD, COMPLETE (KE300,KE400S)			C51	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
*	A-2007-040-A	AUDIO BOARD, COMPLETE (RX300)							(RX300)
*	A-2007-171-A	AUDIO BOARD, COMPLETE (KE200)			C52	1-164-182-11	CERAMIC CHIP 0.0033uF	10%	50V
		*****							(KE300,KE400S)
		< CAPACITOR >			C52	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V
									(KE200)
C11	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	C52	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
		(KE200,KE300,KE400S)							(RX300)
C11	1-163-131-00	CERAMIC CHIP 390PF	5%	50V	C53	1-163-020-00	CERAMIC CHIP 0.0082uF	10%	50V
		(RX300)							(KE300,KE400S)
C12	1-136-157-00	FILM 0.022uF	5%	50V	C53	1-163-022-00	CERAMIC CHIP 0.012uF	10%	50V
C13	1-124-234-00	ELECT 22uF	20%	16V					(KE200)
C14	1-136-272-00	FILM 68PF	5%	630V	C53	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V
		(KE200)							(RX300)
C15	1-102-113-00	CERAMIC 390PF	10%	50V	C54	1-136-601-11	FILM 0.01uF	5%	630V
		(KE200)							(EXCEPT KE200)
C17	1-163-237-11	CERAMIC CHIP 27PF	5%	50V	C54	1-136-560-11	FILM 0.0056uF	5%	630V
		(KE200)							(KE200)
C18	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C56	1-164-505-11	CERAMIC CHIP 2.2uF		16V
C21	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	C57	1-164-346-11	CERAMIC CHIP 1uF		16V
		(KE200,KE300,KE400S)			C58	1-163-024-00	CERAMIC CHIP 0.018uF	10%	50V
C21	1-163-131-00	CERAMIC CHIP 390PF	5%	50V					(KE200)
		(RX300)			C71	1-164-346-11	CERAMIC CHIP 1uF		16V
									(EXCEPT KE200)
C22	1-136-157-00	FILM 0.022uF	5%	50V	C72	1-109-889-11	ELECT 1uF	20%	50V
C23	1-124-234-00	ELECT 22uF	20%	16V					(KE200)
C24	1-136-272-00	FILM 68PF	5%	630V	C80	1-124-234-00	ELECT 22uF	20%	16V
		(KE200)							(EXCEPT KE200)
C25	1-102-113-00	CERAMIC 390PF	10%	50V	C81	1-164-232-11	CERAMIC CHIP 0.01uF		50V
		(KE200)							(EXCEPT KE200)
C27	1-163-237-11	CERAMIC CHIP 27PF	5%	50V	C82	1-136-157-00	FILM 0.022uF	5%	50V
		(KE200)							(EXCEPT KE200)
C28	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C83	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V
C31	1-124-234-00	ELECT 22uF	20%	16V					(EXCEPT KE200)
C32	1-124-234-00	ELECT 22uF	20%	16V	C84	1-136-439-11	FILM 330PF	5%	630V
C33	1-124-234-00	ELECT 22uF	20%	16V					(KE300,KE400S)
C51	1-164-182-11	CERAMIC CHIP 0.0033uF	10%	50V	C84	1-136-478-11	FILM 470PF	5%	630V
		(KE300,KE400S)							(RX300)
C51	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V	C85	1-136-433-11	FILM 100PF	5%	630V
		(KE200)							(EXCEPT KE200)

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C86	1-163-143-00	CERAMIC CHIP	0.0012uF 5% 50V (EXCEPT KE200)	JW4	1-216-295-00	METAL CHIP	0 5% 1/10W (KE200)
C87	1-136-273-91	FILM	75PF 5% 630V (EXCEPT KE200)	JW6	1-216-295-00	METAL CHIP	0 5% 1/10W (KE200)
C88	1-163-003-11	CERAMIC CHIP	330PF 10% 50V (EXCEPT KE200)	JW7	1-216-295-00	METAL CHIP	0 5% 1/10W (KE200)
C89	1-124-234-00	ELECT	22uF 20% 16V (EXCEPT KE200)	JW52	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C90	1-107-584-11	CERAMIC	4PF 0.25PF 500V (EXCEPT KE200)	JW53	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C91	1-164-232-11	CERAMIC CHIP	0.01uF 50V (EXCEPT KE200)	JW54	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C92	1-136-157-00	FILM	0.022uF 5% 50V (EXCEPT KE200)	JW55	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C93	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (EXCEPT KE200)	JW56	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C94	1-136-439-11	FILM	330PF 5% 630V (KE300,KE400S)	JW57	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C94	1-136-478-11	FILM	470PF 5% 630V (RX300)	JW58	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C95	1-136-433-11	FILM	100PF 5% 630V (EXCEPT KE200)	JW59	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C96	1-163-143-00	CERAMIC CHIP	0.0012uF 5% 50V (EXCEPT KE200)	JW60	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C97	1-136-273-91	FILM	75PF 5% 630V (EXCEPT KE200)	JW61	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C98	1-163-003-11	CERAMIC CHIP	330PF 10% 50V (EXCEPT KE200)	JW62	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
C99	1-164-005-11	CERAMIC CHIP	0.47uF 25V (EXCEPT KE200)	JW63	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)
< CONNECTOR >				< COIL >			
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD		L11	1-410-780-11	INDUCTOR	27mH (KE200)
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P		L21	1-410-780-11	INDUCTOR	27mH (KE200)
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD		L81	1-410-780-11	INDUCTOR	27mH (EXCEPT KE200)
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		L91	1-410-780-11	INDUCTOR	27mH (EXCEPT KE200)
CNP72	1-764-902-11	CONNECTOR, FFC/FPC 4P		< TRANSISTOR >			
* CNP75	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P (RX300)		Q51	8-729-822-05	TRANSISTOR	2SD1622-ST-TD (EXCEPT KE200)
< DIODE >				Q51	8-729-142-46	TRANSISTOR	2SC2001-LK (KE200)
D31	8-719-404-46	DIODE MA110		Q52	8-729-822-05	TRANSISTOR	2SD1622-ST-TD (EXCEPT KE200)
< IC >				Q52	8-729-142-46	TRANSISTOR	2SC2001-LK (KE200)
IC31	8-759-106-02	IC uPC4570-G2		Q53	8-729-822-05	TRANSISTOR	2SD1622-ST-TD (EXCEPT KE200)
IC81	8-759-106-56	IC uPC1297CA (EXCEPT KE200)		Q53	8-729-111-29	TRANSISTOR	2SD1616A-K (KE200)
< JUMPER RESISTOR >				Q71	8-729-602-36	TRANSISTOR	2SA1602-F (KE300,KE400S)
JW1	1-216-296-00	METAL CHIP	0 5% 1/8W (KE200)	Q71	8-729-216-22	TRANSISTOR	2SA1162-G (KE200,RX300)
JW2	1-216-295-00	METAL CHIP	0 5% 1/10W (KE200)	< RESISTOR >			
JW3	1-216-295-00	METAL CHIP	0 5% 1/10W (KE200)	R11	1-216-107-00	METAL CHIP	270K 5% 1/10W (EXCEPT RX300)
				R11	1-216-099-00	METAL CHIP	120K 5% 1/10W (RX300)
				R12	1-216-025-91	METAL GLAZE	100 5% 1/10W
				R13	1-216-100-00	METAL GLAZE	130K 5% 1/10W
				R14	1-216-068-00	METAL CHIP	6.2K 5% 1/10W

AUDIO

Ref. No.	Part No.	Description	Remark
R15	1-249-430-11	CARBON	12K 5% 1/4W (KE200)
R21	1-216-107-00	METAL CHIP	270K 5% 1/10W (EXCEPT RX300)
R21	1-216-099-00	METAL CHIP	120K 5% 1/10W (RX300)
R22	1-216-025-91	METAL GLAZE	100 5% 1/10W
R23	1-216-100-00	METAL GLAZE	130K 5% 1/10W
R24	1-216-068-00	METAL CHIP	6.2K 5% 1/10W
R25	1-249-430-11	CARBON	12K 5% 1/4W (KE200)
R31	1-216-033-00	METAL CHIP	220 5% 1/10W
R32	1-216-033-00	METAL CHIP	220 5% 1/10W
R33	1-216-065-00	METAL CHIP	4.7K 5% 1/10W (EXCEPT KE200)
R41	1-249-393-11	CARBON	10 5% 1/4W (KE200)
R42	1-249-393-11	CARBON	10 5% 1/4W (KE200)
R51	1-216-091-00	METAL CHIP	56K 5% 1/10W (KE300,KE400S)
R51	1-216-085-00	METAL CHIP	33K 5% 1/10W (KE200)
R51	1-216-097-91	METAL GLAZE	100K 5% 1/10W (RX300)
R52	1-216-091-00	METAL CHIP	56K 5% 1/10W (KE300,KE400S)
R52	1-216-085-00	METAL CHIP	33K 5% 1/10W (KE200)
R52	1-216-097-91	METAL GLAZE	100K 5% 1/10W (RX300)
R53	1-216-073-00	METAL CHIP	10K 5% 1/10W
R54	1-216-309-00	METAL CHIP	5.6 5% 1/10W
R55	1-216-309-00	METAL CHIP	5.6 5% 1/10W
R56	1-216-298-00	METAL CHIP	2.2 5% 1/10W (KE200)
R57	1-216-298-00	METAL CHIP	2.2 5% 1/10W (EXCEPT KE200)
R71	1-216-025-91	METAL GLAZE	100 5% 1/10W (KE300,KE400S)
R71	1-216-082-00	METAL GLAZE	24K 5% 1/10W (KE200,RX300)
R72	1-216-055-00	METAL CHIP	1.8K 5% 1/10W (KE300,KE400S)
R72	1-216-081-00	METAL CHIP	22K 5% 1/10W (KE200,RX300)
R73	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R74	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R81	1-216-073-00	METAL CHIP	10K 5% 1/10W (EXCEPT KE200)
R82	1-216-085-00	METAL CHIP	33K 5% 1/10W (EXCEPT KE200)
R83	1-216-001-00	METAL CHIP	10 5% 1/10W (EXCEPT KE200)
R84	1-216-101-00	METAL CHIP	150K 5% 1/10W (EXCEPT KE200)

Ref. No.	Part No.	Description	Remark
R85	1-216-075-00	METAL CHIP	12K 5% 1/10W (EXCEPT KE200)
R91	1-216-073-00	METAL CHIP	10K 5% 1/10W (EXCEPT KE200)
R92	1-216-085-00	METAL CHIP	33K 5% 1/10W (EXCEPT KE200)
R93	1-216-001-00	METAL CHIP	10 5% 1/10W (EXCEPT KE200)
R94	1-216-101-00	METAL CHIP	150K 5% 1/10W (EXCEPT KE200)
R95	1-216-075-00	METAL CHIP	12K 5% 1/10W (EXCEPT KE200)
< VARIABLE RESISTOR >			
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL L)	
RV12	1-238-551-11	RES, ADJ, CARBON 220K (BIAS L) (KE200)	
RV21	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL R)	(KE200,RX300)
RV22	1-238-551-11	RES, ADJ, CARBON 220K (BIAS R) (KE200)	
RV71	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED L)	(KE200,RX300)
RV71	1-241-761-11	RES, ADJ, CARBON 1K (TAPE SPEED L)	(KE300,KE400S)
RV72	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED H)	(KE200,RX300)
RV72	1-241-762-11	RES, ADJ, CARBON 2.2K (TAPE SPEED H)	(KE300,KE400S)
RV81	1-241-786-11	RES, ADJ, CARBON 22K (REC BIAS L)	(EXCEPT KE200)
RV91	1-241-786-11	RES, ADJ, CARBON 22K (REC BIAS R)	(EXCEPT KE200)
< RELAY >			
RY31	1-515-913-11	RELAY	
< TRANSFORMER >			
T51	1-433-383-11	TRANSFORMER, BIAS OSCILLATION	(KE300,KE400S)
T51	1-426-650-11	TRANSFORMER, BIAS OSCILLATION (KE200)	
T51	1-406-417-11	COIL, BIAS OSCILLATION (RX300)	
T81	1-433-398-11	TRANSFORMER, BIAS OSCILLATOR	(KE300,KE400S)
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR (RX300)	
T91	1-433-398-11	TRANSFORMER, BIAS OSCILLATOR	(KE300,KE400S)
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR (RX300)	
< TEST PIN >			
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	(EXCEPT KE200)

Ref. No.	Part No.	Description	Remark		
*	A-2007-481-A	DOLBY-S BOARD, COMPLETE (KE400S)	*****		
		< CAPACITOR >			
C1	1-136-165-00	FILM	0.1uF	5%	50V
C2	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C3	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C4	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C5	1-136-165-00	FILM	0.1uF	5%	50V
C6	1-136-165-00	FILM	0.1uF	5%	50V
C7	1-137-372-11	FILM	0.022uF	5%	50V
C8	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C9	1-126-301-11	ELECT	1uF	20%	50V
C10	1-137-442-11	FILM	0.039uF	5%	50V
C11	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C12	1-164-717-11	CERAMIC CHIP	0.0082uF	5%	50V
C13	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C14	1-124-465-00	ELECT	0.47uF	20%	50V
C15	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C16	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C17	1-124-465-00	ELECT	0.47uF	20%	50V
C18	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C19	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C20	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C21	1-164-717-11	CERAMIC CHIP	0.0082uF	5%	50V
C22	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C23	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C24	1-137-442-11	FILM	0.039uF	5%	50V
C25	1-136-165-00	FILM	0.1uF	5%	50V
C26	1-137-372-11	FILM	0.022uF	5%	50V
C28	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN1	1-695-092-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC1	8-752-076-30	IC CXA1917AM			
		< JUMPER RESISTOR >			
J1	1-216-296-00	METAL CHIP	0	0.5%	1/8W
J2	1-216-296-00	METAL CHIP	0	0.5%	1/8W
J3	1-216-296-00	METAL CHIP	0	0.5%	1/8W
		< RESISTOR >			
R1	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R2	1-208-811-11	METAL GLAZE	16K	2%	1/10W
R3	1-208-791-11	METAL GLAZE	2.4K	2%	1/10W
R4	1-208-799-11	METAL GLAZE	5.1K	2%	1/10W
R5	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R6	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R7	1-216-615-11	METAL CHIP	33	0.5%	1/10W

Ref. No.	Part No.	Description	Remark		
R8	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R9	1-208-812-11	METAL GLAZE	18K	2%	1/10W
R10	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R11	1-216-619-11	METAL CHIP	47	0.5%	1/10W
R12	1-216-684-11	METAL CHIP	24K	0.5%	1/10W
R13	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R14	1-216-619-11	METAL CHIP	47	0.5%	1/10W
R15	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R16	1-216-678-11	METAL CHIP	13K	0.5%	1/10W
R17	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R18	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R19	1-208-462-41	METAL GLAZE	10K	2%	1/10W
R20	1-216-689-11	METAL CHIP	39K	0.5%	1/10W

*	1-638-020-11	LEAF SW BOARD	*****		
		< CONNECTOR >			
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P			
CNP81	1-695-368-31	PIN, CONNECTOR (PC BOARD) 7P			
		< IC >			
IC81	8-749-924-10	IC (PHONT REFLECTOR NJL5165K-B (H1))			
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5%	1/4W
R82	1-247-818-11	CARBON	300	5%	1/4W (RX300)
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)			
S82	1-571-281-21	SWITCH, LEAF (70uS)			
S83	1-571-281-21	SWITCH, LEAF (METAL)			
S84	1-571-281-21	SWITCH, LEAF (REC-A)			
S85	1-571-281-21	SWITCH, LEAF (REC-B) (RX300)			
S86	1-571-281-21	SWITCH, LEAF (HALF)			

MAIN	AC POWER SW	PANEL	POWER SW	REC VOL	TRANSFORMER	HP
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-2007-523-A	MAIN BOARD, COMPLETE (KE200)		C207	1-126-965-11	ELECT 22uF 20% 50V	
*	A-2007-524-A	MAIN BOARD, COMPLETE (KE400S:EXCEPT US)		C208	1-126-964-11	ELECT 10uF 20% 50V	
*	A-2007-525-A	MAIN BOARD, COMPLETE (KE400S:US)					(KE400S)
*	A-2007-526-A	MAIN BOARD, COMPLETE (KE300:EXCEPT E)		C209	1-126-964-11	ELECT 10uF 20% 50V	
*	A-2007-527-A	MAIN BOARD, COMPLETE (KE300:E)		C210	1-126-963-11	ELECT 4.7uF 20% 50V	
*	A-2007-591-A	MAIN BOARD, COMPLETE (RX300)		C211	1-126-962-11	ELECT 3.3uF 20% 50V	
		*****		C212	1-124-902-00	ELECT 0.47uF 20% 50V	
		AC POWER SW BOARD (EXCEPT US,CND,E)		C213	1-126-963-11	ELECT 4.7uF 20% 50V	
		*****		C231	1-126-963-11	ELECT 4.7uF 20% 50V	
		PANEL BOARD					(EXCEPT KE200)
		*****		C232	1-126-962-11	ELECT 3.3uF 20% 50V	
		POWER SW BOARD (US,CND,E)		C233	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		*****		C501	1-126-952-11	ELECT 1000uF 20% 16V	
		REC VOL BOARD					
		*****		C502	1-126-964-11	ELECT 10uF 20% 50V	
		TRANSFORMER BOARD		C503	1-126-964-11	ELECT 10uF 20% 50V	
		*****		C504	1-124-903-11	ELECT 1uF 20% 50V	
		HP BOARD					(EXCEPT KE200)
		*****		C505	1-126-964-11	ELECT 10uF 20% 50V	
*	3-377-337-11	HOLDER (FL)		C506	1-126-925-11	ELECT 470uF 20% 10V	
*	3-923-762-11	HOLDER (TR)					(KE400S,KE200)
		< CAPACITOR >		C506	1-126-933-11	ELECT 100uF 20% 10V	
							(KE300,RX300)
C101	1-137-372-11	FILM 0.022uF 5% 50V		C511	1-137-374-11	FILM 0.047uF 5% 50V	
		(EXCEPT KE200)					(EXCEPT KE200)
C101	1-136-157-00	FILM 0.022uF 5% 50V		C512	1-136-164-00	FILM 0.082uF 5% 50V	
		(KE200)					(EXCEPT KE200)
C102	1-126-963-11	ELECT 4.7uF 20% 50V		C513	1-137-367-11	FILM 0.0033uF 5% 50V	
C103	1-162-302-11	CERAMIC 0.0022uF 20% 16V					(EXCEPT KE200)
		(EXCEPT KE200)		C521	1-126-964-11	ELECT 10uF 20% 50V	
C104	1-126-964-11	ELECT 10uF 20% 50V					
C105	1-136-165-00	FILM 0.1uF 5% 50V		C551	1-162-282-31	CERAMIC 100PF 10% 50V	
C106	1-136-163-00	FILM 0.068uF 5% 50V		C552	1-161-494-00	CERAMIC 0.022uF 25V	
C107	1-126-965-11	ELECT 22uF 20% 50V		C553	1-162-217-31	CERAMIC 56PF 5% 50V	
C108	1-126-964-11	ELECT 10uF 20% 50V		C554	1-124-925-11	ELECT 2.2uF 20% 100V	
		(KE400S)		C555	1-124-925-11	ELECT 2.2uF 20% 100V	
C109	1-126-964-11	ELECT 10uF 20% 50V		C571	1-124-925-11	ELECT 2.2uF 20% 100V	
C110	1-126-963-11	ELECT 4.7uF 20% 50V		C572	1-126-916-11	ELECT 1000uF 20% 6.3V	
C111	1-126-962-11	ELECT 3.3uF 20% 50V		C601	1-164-159-11	CERAMIC 0.1uF 50V	
C112	1-124-902-00	ELECT 0.47uF 20% 50V		C602	1-162-288-31	CERAMIC 330PF 10% 50V	
C113	1-126-963-11	ELECT 4.7uF 20% 50V		C701	1-126-943-11	ELECT 2200uF 20% 25V	
C131	1-126-963-11	ELECT 4.7uF 20% 50V					
		(EXCEPT KE200)		C702	1-126-943-11	ELECT 2200uF 20% 25V	
C132	1-126-962-11	ELECT 3.3uF 20% 50V		C703	1-104-664-11	ELECT 47uF 20% 25V	
C133	1-162-294-31	CERAMIC 0.001uF 10% 50V		C704	1-126-926-11	ELECT 1000uF 20% 10V	
C201	1-137-372-11	FILM 0.022uF 5% 50V		C705	1-126-926-11	ELECT 1000uF 20% 10V	
		(EXCEPT KE200)		C706	1-126-935-11	ELECT 470uF 20% 6.3V	
C201	1-136-157-00	FILM 0.022uF 5% 50V					
		(KE200)		C707	1-126-964-11	ELECT 10uF 20% 50V	
C202	1-126-963-11	ELECT 4.7uF 20% 50V		C708	1-126-963-11	ELECT 4.7uF 20% 50V	
				C709	1-126-968-11	ELECT 100uF 20% 50V	
C203	1-162-302-11	CERAMIC 0.0022uF 20% 16V		C710	1-104-664-11	ELECT 47uF 20% 25V	
		(EXCEPT KE200)		C711	1-164-159-11	CERAMIC 0.1uF 50V	
C204	1-126-964-11	ELECT 10uF 20% 50V					
C205	1-136-165-00	FILM 0.1uF 5% 50V		C712	1-161-494-00	CERAMIC 0.022uF 25V	
C206	1-136-163-00	FILM 0.068uF 5% 50V		△ C713	1-113-925-11	CERAMIC 0.01uF 20% 250V	
							(EXCEPT US,E)

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN	AC POWER SW	PANEL	POWER SW	REC VOL	TRANSFORMER	HP
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Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark
C714	1-136-169-00	FILM	0.22uF	5%	50V	D709	8-719-933-54	DIODE HZS9A2L	
			(KE200,KE300:EXCEPT E.KE400S)			D710	8-719-000-60	DIODE UZL-6M2	
C715	1-136-169-00	FILM	0.22uF	5%	50V	D711	8-719-987-63	DIODE 1N4148M	
			(KE200,KE300:EXCEPT E.KE400S)			D712	8-719-987-63	DIODE 1N4148M	
△C716	1-113-920-11	CERAMIC	0.0022uF	20%	250V				
			(RX300)			D713	8-719-000-93	DIODE UZL-7H1	
C801	1-126-963-11	ELECT	4.7uF	20%	50V	D714	8-719-987-63	DIODE 1N4148M	
C803	1-161-494-00	CERAMIC	0.022uF		25V	D715	8-719-985-41	DIODE HZS2CLL	
C804	1-161-494-00	CERAMIC	0.022uF		25V	D801	8-719-933-33	DIODE HZS6A1L	
C805	1-161-494-00	CERAMIC	0.022uF		25V	D802	8-719-933-33	DIODE HZS6A1L	
C806	1-126-964-11	ELECT	10uF	20%	50V			< INDICATOR TUBE >	
C807	1-126-935-11	ELECT	470uF	20%	6.3V	FL901	1-517-374-11	INDICATOR TUBE, FLUORESCENT (KE400S)	
C808	1-161-494-00	CERAMIC	0.022uF		25V	FL901	1-517-173-11	INDICATOR TUBE, FLUORESCENT	
C809	1-161-494-00	CERAMIC	0.022uF		25V			(EXCEPT KE400S)	
C810	1-162-282-31	CERAMIC	100PF	10%	50V			< IC >	
C811	1-164-159-11	CERAMIC	0.1uF		50V				
C812	1-137-374-11	FILM	0.047uF	5%	50V	IC501	8-752-066-35	IC CXA1563S (KE400S)	
			(KE200,KE300:EXCEPT E.KE400S)			IC501	8-752-060-46	IC CXA1561S (EXCEPT KE400S)	
		< CONNECTOR >				IC502	8-752-055-62	IC CXA1579P (EXCEPT RX300)	
						IC502	8-752-055-61	IC CXA1578P (RX300)	
* CN81	1-568-826-11	SOCKET, CONNECTOR 7P				IC503	8-759-634-51	IC M5218AP (EXCEPT KE200)	
CN101	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P (KE400S)				IC504	8-759-634-51	IC M5218AP	
CN201	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P (KE400S)				IC505	8-759-634-51	IC M5218AP	
* CN504	1-568-830-11	SOCKET, CONNECTOR 11P				IC506	8-759-140-53	IC MC14053BCP (EXCEPT KE200)	
* CN505	1-568-954-11	PIN, CONNECTOR 5P (US,CND,E)				IC507	8-759-634-51	IC M5218AP (EXCEPT KE200)	
						IC508	8-759-000-48	IC MC14052BCP	
CN506	1-506-468-11	PIN, CONNECTOR 3P				IC509	8-759-916-14	IC SN74HC04AN (EXCEPT KE200)	
CN701	1-564-510-11	PLUG, CONNECTOR 7P				IC510	8-759-634-51	IC M5218AP	
* CN702	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P				IC511	8-759-634-51	IC M5218AP	
* CN703	1-573-565-11	PIN, CONNECTOR 5P (KE300:E)				IC512	8-759-634-51	IC M5218AP (KE400S)	
CN704	1-568-226-11	PIN, CONNECTOR 2P (EXCEPT US,E)				IC601	8-759-803-42	IC LA6500-FA	
* CN801	1-568-844-11	SOCKET, CONNECTOR 29P				IC701	8-759-634-51	IC M5218AP	
* CN901	1-568-844-11	SOCKET, CONNECTOR 29P				IC801	8-752-856-27	IC CXP82612-022Q	
* CN904	1-568-830-11	SOCKET, CONNECTOR 11P				IC802	8-759-165-82	IC PST600E-T	
* CNB31	1-691-916-11	CONNECTOR, BOARD TO BOARD				IC901	8-741-810-59	IC SBX1810-59	
* CNB33	1-691-916-11	CONNECTOR, BOARD TO BOARD						< JACK >	
		< DIODE >				J501	1-770-614-11	JACK, PIN 4P (LINE)	
D131	8-719-987-63	DIODE 1N4148M				J502	1-568-519-41	JACK, LARGE TYPE (PHONES)	
D132	8-719-987-63	DIODE 1N4148M						< FILTER >	
D231	8-719-987-63	DIODE 1N4148M				LPF101	1-235-175-11	FILTER, LOW PASS (EXCEPT KE200)	
D232	8-719-987-63	DIODE 1N4148M				LPF101	1-236-087-11	FILTER, LOW PASS (KE200)	
D511	8-719-987-63	DIODE 1N4148M (EXCEPT KE200)				LPF201	1-235-175-11	FILTER, LOW PASS (EXCEPT KE200)	
D512	8-719-987-63	DIODE 1N4148M (EXCEPT KE200)				LPF201	1-236-087-11	FILTER, LOW PASS (KE200)	
D513	8-719-987-63	DIODE 1N4148M						< TRANSISTOR >	
D551	8-719-987-63	DIODE 1N4148M				Q101	8-729-900-89	TRANSISTOR DTC144ES	
D701	8-719-024-99	DIODE 11ES2-NTA2B				Q102	8-729-900-80	TRANSISTOR DTC114ES (EXCEPT KE200)	
D702	8-719-024-99	DIODE 11ES2-NTA2B				Q121	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
D703	8-719-024-99	DIODE 11ES2-NTA2B				Q122	8-729-119-78	TRANSISTOR 2SC2785-HFE (EXCEPT KE200)	
D704	8-719-024-99	DIODE 11ES2-NTA2B				Q201	8-729-900-89	TRANSISTOR DTC144ES	
D705	8-719-024-99	DIODE 11ES2-NTA2B							
D706	8-719-024-99	DIODE 11ES2-NTA2B							
D707	8-719-024-99	DIODE 11ES2-NTA2B							
D708	8-719-933-33	DIODE HZS6A1L							

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN	AC POWER SW	PANEL	POWER SW	REC VOL	TRANSFORMER	HP
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Ref. No.	Part No.	Description	Remark		
Q202	8-729-900-80	TRANSISTOR	DTC114ES (EXCEPT KE200)		
Q221	8-729-922-37	TRANSISTOR	2SD2144S-UVW		
Q222	8-729-119-78	TRANSISTOR	2SC2785-HFE (EXCEPT KE200)		
Q503	8-729-422-57	TRANSISTOR	UN4111		
Q504	8-729-900-80	TRANSISTOR	DTC114ES		
Q505	8-729-900-89	TRANSISTOR	DTC144ES (RX300)		
Q511	8-729-119-78	TRANSISTOR	2SC2785-HFE (EXCEPT KE200)		
Q512	8-729-900-74	TRANSISTOR	DTC143ES (EXCEPT KE200)		
Q521	8-729-900-80	TRANSISTOR	DTC114ES		
Q531	8-729-422-57	TRANSISTOR	UN4111 (EXCEPT KE200)		
Q532	8-729-900-80	TRANSISTOR	DTC114ES		
Q551	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q572	8-729-422-57	TRANSISTOR	UN4111		
Q573	8-729-900-65	TRANSISTOR	DTA144ES (EXCEPT KE200)		
Q601	8-729-801-93	TRANSISTOR	2SD1387-3		
Q701	8-729-141-83	TRANSISTOR	2SB1094-LK		
Q702	8-729-209-15	TRANSISTOR	2SD2012		
Q703	8-729-900-74	TRANSISTOR	DTC143TS (EXCEPT KE200)		
Q704	8-729-141-83	TRANSISTOR	2SB1094-LK		
Q705	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q706	8-729-900-74	TRANSISTOR	DTC143TS (EXCEPT KE200)		
Q707	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q708	8-729-140-04	TRANSISTOR	2SB1116A-L		
Q803	8-729-900-80	TRANSISTOR	DTC114ES		
Q805	8-729-119-76	TRANSISTOR	2SA1175-HFE		
		< RESISTOR >			
R101	1-247-838-00	CARBON	2K	5%	1/4W (EXCPT RX300)
R101	1-249-421-11	CARBON	2.2K	5%	1/4W (RX300)
R102	1-247-842-11	CARBON	3K	5%	1/4W (EXCEPT RX300)
R102	1-249-423-11	CARBON	3.3K	5%	1/4W (RX300)
R104	1-249-417-11	CARBON	1K	5%	1/4W
R105	1-249-423-11	CARBON	3.3K	5%	1/4W
R106	1-247-887-00	CARBON	220K	5%	1/4W (EXCEPT KE200)
R107	1-249-428-11	CARBON	8.2K	5%	1/4W
R108	1-249-429-11	CARBON	10K	5%	1/4W
R110	1-249-429-11	CARBON	10K	5%	1/4W
R111	1-249-423-11	CARBON	3.3K	5%	1/4W
R112	1-247-864-11	CARBON	24K	5%	1/4W (KE400S)
R113	1-249-429-11	CARBON	10K	5%	1/4W (KE400S)
R114	1-249-437-11	CARBON	47K	5%	1/4W (KE400S)
R121	1-249-437-11	CARBON	47K	5%	1/4W
R122	1-249-421-11	CARBON	2.2K	5%	1/4W
R123	1-249-421-11	CARBON	2.2K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R124	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT KE200)
R125	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT KE200)
R131	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT KE200)
R132	1-247-822-11	CARBON	430	5%	1/4W (EXCEPT KE200)
R133	1-247-866-11	CARBON	30K	5%	1/4W (EXCEPT KE200)
R134	1-249-435-11	CARBON	33K	5%	1/4W
R135	1-249-439-11	CARBON	68K	5%	1/4W
R136	1-249-410-11	CARBON	270	5%	1/4W
R141	1-249-432-11	CARBON	18K	5%	1/4W
R142	1-249-432-11	CARBON	18K	5%	1/4W
R143	1-249-423-11	CARBON	3.3K	5%	1/4W
R144	1-247-848-11	CARBON	5.1K	5%	1/4W
R145	1-249-409-11	CARBON	220	5%	1/4W
R151	1-249-433-11	CARBON	22K	5%	1/4W
R152	1-249-417-11	CARBON	1K	5%	1/4W
R153	1-249-441-11	CARBON	100K	5%	1/4W
R154	1-249-433-11	CARBON	22K	5%	1/4W
R201	1-247-838-00	CARBON	2K	5%	1/4W (EXCEPT RX300)
R201	1-249-421-11	CARBON	2.2K	5%	1/4W (RX300)
R202	1-247-842-11	CARBON	3K	5%	1/4W (EXCEPT RX300)
R202	1-249-423-11	CARBON	3.3K	5%	1/4W (RX300)
R204	1-249-417-11	CARBON	1K	5%	1/4W
R205	1-249-423-11	CARBON	3.3K	5%	1/4W
R206	1-247-887-00	CARBON	220K	5%	1/4W (EXCEPT KE200)
R207	1-249-428-11	CARBON	8.2K	5%	1/4W
R208	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-249-423-11	CARBON	3.3K	5%	1/4W
R212	1-247-864-11	CARBON	24K	5%	1/4W (KE400S)
R213	1-249-429-11	CARBON	10K	5%	1/4W (KE400S)
R214	1-249-437-11	CARBON	47K	5%	1/4W (KE400S)
R221	1-249-437-11	CARBON	47K	5%	1/4W
R222	1-249-421-11	CARBON	2.2K	5%	1/4W
R223	1-249-421-11	CARBON	2.2K	5%	1/4W
R224	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT KE200)
R225	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT KE200)
R231	1-249-425-11	CARBON	4.7K	5%	1/4W (EXCEPT KE200)
R232	1-247-822-11	CARBON	430	5%	1/4W (EXCEPT KE200)

MAIN	AC POWER SW	PANEL	POWER SW	REC VOL	TRANSFORMER	HP
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R233	1-247-866-11	CARBON	30K 5% 1/4W (EXCEPT KE200)	R526	1-249-429-11	CARBON	10K 5% 1/4W (RX300)
R234	1-249-435-11	CARBON	33K 5% 1/4W	R527	1-249-426-11	CARBON	5.6K 5% 1/4W (EXCEPT KE200)
R235	1-249-439-11	CARBON	68K 5% 1/4W	R528	1-249-422-11	CARBON	2.7K 5% 1/4W (EXCEPT KE200)
R236	1-249-410-11	CARBON	270 5% 1/4W	R529	1-249-429-11	CARBON	10K 5% 1/4W
R241	1-249-432-11	CARBON	18K 5% 1/4W	R530	1-249-421-11	CARBON	2.2K 5% 1/4W
R242	1-249-432-11	CARBON	18K 5% 1/4W	R531	1-249-427-11	CARBON	6.8K 5% 1/4W (KE300,KE400S)
R243	1-249-423-11	CARBON	3.3K 5% 1/4W	R531	1-249-426-11	CARBON	5.6K 5% 1/4W (RX300)
R244	1-247-848-11	CARBON	5.1K 5% 1/4W	R532	1-249-433-11	CARBON	22K 5% 1/4W (KE300,KE400S)
R245	1-249-409-11	CARBON	220 5% 1/4W	R532	1-247-862-11	CARBON	20K 5% 1/4W (RX300)
R251	1-249-433-11	CARBON	22K 5% 1/4W	R535	1-249-419-11	CARBON	1.5K 5% 1/4W (KE300,KE400S)
R252	1-249-417-11	CARBON	1K 5% 1/4W	R536	1-249-421-11	CARBON	2.2K 5% 1/4W (EXCEPT KE200)
R253	1-249-441-11	CARBON	100K 5% 1/4W	R537	1-247-866-11	CARBON	30K 5% 1/4W (EXCEPT KE200)
R254	1-249-433-11	CARBON	22K 5% 1/4W	R538	1-247-852-11	CARBON	7.5K 5% 1/4W (EXCEPT KE200)
R502	1-215-452-00	METAL	20K 1% 1/4W	R539	1-249-431-11	CARBON	15K 5% 1/4W (EXCEPT KE200)
R503	1-249-422-11	CARBON	2.7K 5% 1/4W	R540	1-247-874-11	CARBON	62K 5% 1/4W (EXCEPT KE200)
R504	1-215-455-00	METAL	27K 1% 1/4W	R541	1-249-429-11	CARBON	10K 5% 1/4W (EXCEPT KE200)
R505	1-249-417-11	CARBON	1K 5% 1/4W (EXCEPT KE200)	R542	1-249-429-11	CARBON	10K 5% 1/4W (EXCEPT KE200)
R506	1-249-429-11	CARBON	10K 5% 1/4W (RX300)	R543	1-249-429-11	CARBON	10K 5% 1/4W (EXCEPT KE200)
R507	1-249-440-11	CARBON	82K 5% 1/4W (RX300)	R544	1-249-429-11	CARBON	10K 5% 1/4W (EXCEPT KE200)
R512	1-249-421-11	CARBON	2.2K 5% 1/4W (EXCEPT KE200)	R553	1-249-437-11	CARBON	47K 5% 1/4W
R513	1-249-441-11	CARBON	100K 5% 1/4W (EXCEPT KE200)	R555	1-249-427-11	CARBON	6.8K 5% 1/4W
R514	1-249-441-11	CARBON	100K 5% 1/4W (EXCEPT KE200)	R556	1-249-423-11	CARBON	3.3K 5% 1/4W
R515	1-249-436-11	CARBON	39K 5% 1/4W (EXCEPT KE200)	R557	1-249-441-11	CARBON	100K 5% 1/4W
R516	1-249-425-11	CARBON	4.7K 5% 1/4W (EXCEPT KE200)	R558	1-249-429-11	CARBON	10K 5% 1/4W
R517	1-249-433-11	CARBON	22K 5% 1/4W (EXCEPT KE200)	R559	1-249-441-11	CARBON	100K 5% 1/4W
R518	1-249-425-11	CARBON	4.7K 5% 1/4W (EXCEPT KE200)	R560	1-249-417-11	CARBON	1K 5% 1/4W
R521	1-249-426-11	CARBON	5.6K 5% 1/4W (KE300,KE400S)	R561	1-249-432-11	CARBON	18K 5% 1/4W
R521	1-247-852-11	CARBON	7.5K 5% 1/4W (RX300)	R562	1-249-436-11	CARBON	39K 5% 1/4W
R522	1-249-426-11	CARBON	5.6K 5% 1/4W (KE300,KE400S)	R563	1-247-848-11	CARBON	5.1K 5% 1/4W (KE200)
R522	1-247-852-11	CARBON	7.5K 5% 1/4W (RX300)	R564	1-247-834-11	CARBON	1.3K 5% 1/4W (KE200)
R523	1-247-858-11	CARBON	13K 5% 1/4W (EXCEPT KE200)	R565	1-249-430-11	CARBON	12K 5% 1/4W (KE200)
R524	1-247-852-11	CARBON	7.5K 5% 1/4W (RX300)	R567	1-249-433-11	CARBON	22K 5% 1/4W (KE200)
R525	1-247-854-11	CARBON	9.1K 5% 1/4W (KE300,KE400S)	R572	1-249-429-11	CARBON	10K 5% 1/4W
R525	1-249-429-11	CARBON	10K 5% 1/4W (RX300)	R573	1-249-429-11	CARBON	10K 5% 1/4W
R526	1-247-854-11	CARBON	9.1K 5% 1/4W (KE300,KE400S)				

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MAIN	AC POWER SW	PANEL	POWER SW	REC VOL	TRANSFORMER	HP
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Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S901	1-554-303-21	SWITCH, TACTILE (■ PAUSE)	
S902	1-554-303-21	SWITCH, TACTILE (◀▶ AMS ▶▶) (RX300)	
S903	1-554-303-21	SWITCH, TACTILE (◀▶ AMS ▶▶) (EXCEPT RX300)	
S904	1-554-303-21	SWITCH, TACTILE (◀▶ AMS ▶▶) (RX300)	
S905	1-554-303-21	SWITCH, TACTILE (○ REC MUTE)	
S906	1-554-303-21	SWITCH, TACTILE (RESET)	
S907	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S908	1-554-303-21	SWITCH, TACTILE (■)	
S909	1-554-303-21	SWITCH, TACTILE (◀◀)	
S910	1-554-303-21	SWITCH, TACTILE (▶▶)	
S911	1-554-303-21	SWITCH, TACTILE (● REC)	
S912	1-762-567-11	SWITCH, SLIDE (DIRECTION) (RX300)	
S921	1-554-303-21	SWITCH, TACTILE (AUTO CAL) (EXCEPT KE200)	
S922	1-762-647-11	SWITCH, ROTARY (DOLBY NR) (KE400S)	
S922	1-762-641-11	SWITCH, ROTARY (DOLBY NR) (KE300,RX300)	
S922	1-762-640-11	SWITCH, ROTARY (DOLBY NR) (KE200)	
△S930	1-762-581-11	SWITCH, AC POWER PUSH (1 KEY) (POWER) (EXCEPT US,CND,E)	
S931	1-762-580-11	SWITCH, PUSH (1 KEY) (POWER) (US,CND,E)	
		< TRANSFORMER >	
△T901	1-426-651-11	TRANSFORMER,POWER (KE200,KE300: EXCEPT E)	
△T901	1-426-652-11	TRANSFORMER,POWER (KE300:E)	
△T901	1-427-743-11	TRANSFORMER,POWER (RX300)	
△T901	1-427-751-11	TRANSFORMER,POWER (KE400S:EXCEPT US)	
△T901	1-427-752-11	TRANSFORMER,POWER (KE400S:US)	
		< TEST PIN >	
* TP801	1-560-060-00	PIN, CONNECTOR 2P	
		< VIBRATOR >	
X801	1-577-360-11	VIBRATOR, CERAMIC (6MHz)	

MISCELLANEOUS

△9	1-569-007-11	ADAPTER, CONVERSION 2P (KE300:E)
56	1-773-287-11	WIRE (FLAT TYPE) (29 CORE)
61	1-765-318-11	WIRE (FLAT TYPE) (7 CORE)
67	1-769-947-11	WIRE (FLAT TYPE) (11 CORE)
△CNP901	1-558-945-21	CORD, POWER (POLAR.SPT-1)
△CNP901	1-575-651-21	CORD, POWER (AEP,G,MY,SP)
△CNP901	1-696-027-11	CORD, POWER (E)
△CNP901	1-696-845-11	CORD, POWER (AUS)
△CNP901	1-751-523-11	CORD, POWER (UK)
FL901	1-517-173-11	INDICATOR TUBE, FLUORESCENT (KE200,KE300,RX300)
FL901	1-517-374-11	INDICATOR TUBE, FLUORESCENT (KE400S)

Ref. No.	Part No.	Description	Remark
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE) (EXCEPT RX300)	
HRP901	1-543-919-11	HEAD,MAGNETIC (RECORD/PLAYBACK) (EXCEPT RX300)	
HRPE901A-2004-527-A		DECK ASSY, HEAD (RECORD/PLAYBACK/ERASE) (RX300)	
M901	X-3363-501-2	MOTOR ASSY,REEL (REEL)	
M902	X-3365-377-2	MOTOR ASSY,CAPSTAN (CAPSTAN)	
△S701	1-570-046-21	SWITCH, VOLTAGE CHANGE (E)	
△T901	1-426-651-11	TRANSFORMER, POWER (KE200,KE300:EXCEPT E)	
△T901	1-426-652-11	TRANSFORMER, POWER (KE300:E)	
△T901	1-427-743-11	TRANSFORMER, POWER (RX300)	
△T901	1-427-751-11	TRANSFORMER, POWER (KE400S:EXCEPT US)	
△T901	1-427-752-11	TRANSFORMER, POWER (KE400S:US)	

		ACCESSORIES & PACKING MATERIALS	

	1-551-734-11	CORD, CONNECTION	
	3-856-130-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH) (RX300)	
	3-856-134-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/ SPANISH/PORTUGUESE) (AEP)	
	3-856-134-21	MANUAL, INSTRUCTION (ENGLISH) (US,UK,AUS)	
	3-856-134-31	MANUAL, INSTRUCTION (GERMAN/DUTCH/ SWEDISH/ITALIAN)(AEP)	
	3-856-134-41	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-856-134-51	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,CHINESE) (E,MY,SP)	
*	3-931-693-01	INDIVIDUAL CARTON (KE400S:US,AUS)	
*	3-932-083-01	CUSHION	
*	3-935-033-01	INDIVIDUAL CARTON (KE200)	
*	3-935-034-01	INDIVIDUAL CARTON (KE300:AEP,G,MY,SP)	
*	3-935-035-01	INDIVIDUAL CARTON (KE400S:AEP,UK,G)	
*	3-935-036-01	INDIVIDUAL CARTON (RX300)	
*	3-935-090-01	INDIVIDUAL CARTON (KE300:E,AUS)	

HARDWARE LIST

#1	7-682-548-04	SCREW +BVTT 3X8 (S)
#2	7-685-871-01	SCREW +BVTT 3X6 (S)
#3	7-685-872-09	SCREW +BVTT 3X8 (S)
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#5	7-685-862-09	SCREW +BVTT 2.6X6 (S)
#6	7-685-134-19	SCREW (+ PTPWH) (2.6X8)
#7	7-621-775-00	SCREW +B 2.6X3
#8	7-627-556-08	SCREW +P 2.6X2.8
#9	7-621-772-58	SCREW (+B2X10) (EXCEPT RX300)

The components identified by mark
△ or dotted line with mark △ are
critical for safety.
Replace only with part number
specified.

Les composants identifiés par une
marque △ sont critiques pour la
sécurité.
Ne les remplacer que par une pièce
portant le numéro spécifié.

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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